

# **FISCAL YEAR 2000 FUNDING PROPOSAL**

*for the*

**CLEANUP AND REDEVELOPMENT PROGRAM**

John Engler, Governor  
Russell J. Harding, Director  
[www.deq.mi.us](http://www.deq.mi.us)



Michigan Department of Environmental Quality  
Environmental Response Division  
Storage Tank Division

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## PROPOSAL SUMMARY

This document outlines the Department of Environmental Quality's (DEQ's) proposed Fiscal Year 2000 (FY00) cleanup programs. It includes:

- The DEQ's request for FY00 funds from the Cleanup and Redevelopment Fund (CRF) and the DEQ's proposed FY00 cleanup sites which will be funded with both Cleanup and Redevelopment Funds and state general funds.
- The DEQ's plans to re-allocate previously appropriated funds to carry out additional cleanup activities in FY00 at new sites and sites with previous appropriations.

### FY00 Cleanup and Redevelopment Request

The CRF is created under Section 8 of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA).

For FY00, the DEQ is seeking an appropriation of \$8,200,000 from the CRF for cleanup programs in the Environmental Response Division (ERD) and the Storage Tank Division (STD) as shown below:

Division	Program	Amount
ERD	Cleanup and Redevelopment Program: Cleanup Projects	\$3,234,000
STD	Leaking Underground Storage Tank Program: Cleanup Projects	\$966,000
<i>Subtotal -- ERD and USTD Cleanup Projects</i>		<i>\$4,200,000</i>
ERD	Emergency Cleanup Actions and Contingencies	\$2,000,000
STD	Emergency Cleanup Actions and Contingencies	\$2,000,000
<b>Total</b>		<b>\$8,200,000</b>

Under Section 13 of Part 201 of the NREPA, the DEQ must seek an annual appropriation from the CRF. As part of this request, the DEQ must submit a list of the cleanup project sites where it is proposing to expend Cleanup and Redevelopment Funds along with the following information for each site: name, response activities planned, and estimated cost of these activities.

As the above table indicates, a total of \$8,200,000 in FY00 CRF will be used for the DEQ's cleanup and redevelopment program. This document provides lists of the proposed STD and ERD cleanup projects. The lists and site/project information are provided in two sections:

- **Section I** provides lists and site/project information for STD's Leaking Underground Storage Tank (LUST) Cleanup Program.
- **Section II** provides lists and site/project information for the ERD's Environmental Cleanup and Redevelopment Program.

## SECTION I

### STORAGE TANK DIVISION LEAKING UNDERGROUND STORAGE TANK CLEANUP PROGRAM

The STD is responsible for protecting the public health, environment, and natural resources of the state from LUSTs through education, prevention, remediation and compliance activities. The STD performs activities associated with law and rule requirements for certain underground storage tanks (USTs). The requirements are found under the following parts of the NREPA: Part 211, Underground Storage Tank Regulations; Part 213, Leaking Underground Storage Tanks; and Part 215, Underground Storage Tank Financial Assurance.

The LUST cleanup program targets include: identifying sites of contamination resulting from LUSTs; auditing required reports and plans; and overseeing corrective actions conducted by the owner or operator or other responsible parties. Another target is initiating corrective actions under the guidance of Part 213 at the sites that pose a human health or environmental risk where a responsible party cannot be identified or where the responsible party is unable or unwilling to do so.

The facilities proposed for state-funded corrective actions were selected for FY00 funding based on their acute health or environmental risks. Examples of such acute risks are: fire and explosion hazards; actual or potential impacts to drinking water wells or sensitive environmental receptors (such as surface waters and wetlands); inhalation hazards; direct contact hazards; and release of free product to groundwater. The sites being recommended for FY00 funding are the sites with the most acute risks. There are approximately 7,000 sites of contamination from LUSTs.

To carry out its proposed FY00 LUST Clean Program, the STD will use a combination of funding sources as indicated below:

<b>Funding Source</b>	<b>Cleanup Projects</b>	<b>Emergency Cleanup Actions/Contingencies</b>
<b>FY00</b> Cleanup and Redevelopment Funds	\$966,000	\$2,000,000
<b>FY00</b> General Funds	\$5,000,000	
<b>TOTALS</b>	<b>\$5,966,000</b>	<b>\$2,000,000</b>

#### LUST Cleanup Program Cleanup Projects

A total of 31 LUST cleanup projects with an estimated cost of \$5,966,000 are proposed for FY00, as follows:

- A total of 29 projects are proposed to be funded with FY00 funds, including both general funds and Cleanup and Redevelopment Funds. The estimated cost of these 29 projects is \$5,826,000.
- Two projects are proposed to be funded with CRF savings from prior fiscal year appropriations. The estimated cost of these two projects is \$140,000. No FY00 funds are being requested for these sites (i.e., the FY00 Recommendation is \$0). During FY00, the STD anticipates that it will be able to identify Cleanup and Redevelopment Funds that have been appropriated in fiscal years 1997 and 1998 for LUST cleanup projects

in prior fiscal years, that are no longer needed for one or more reasons. Reasons may include: the liable party stepped in to complete the work, the project was completed for less than originally estimated, or the project was no longer needed to achieve the STD's cleanup goals for the site. As these savings are realized in FY00, they will be re-allocated by STD to fund the two projects noted above.

A summary of the number of projects and estimated costs --**by county**-- for the 31 LUST Cleanup Projects is provided in the following two charts:

#### **FY00 LUST CLEANUP PROJECTS TO BE FUNDED WITH FY00 APPROPRIATIONS**

##### **ESTIMATED COSTS BY COUNTY**

<b>COUNTY</b>	<b>TOTAL ESTIMATED COST</b>	<b>NUMBER OF PROJECTS</b>	<b>COUNTY</b>	<b>TOTAL ESTIMATED COST</b>	<b>NUMBER OF PROJECTS</b>
Alcona	\$150,000	1	Kalamazoo	\$600,000	2
Allegan	\$250,000	1	Kent	\$500,000	2
Alpena	\$120,000	1	Lenawee	\$60,000	1
Berrien	\$300,000	1	Monroe	\$120,000	1
Branch	\$646,000	2	Muskegon	\$250,000	1
Calhoun	\$500,000	1	Newaygo	\$250,000	1
Clinton	\$310,000	2	Oakland	\$200,000	1
Eaton	\$250,000	1	Osceola	\$125,000	1
Genesee	\$265,000	2	Presque Isle	\$160,000	1
Hillsdale	\$100,000	1	Washtenaw	\$585,000	3
Ingham	\$125,000	1	Wexford	\$100,000	1
<b>TOTAL -- 29 sites -- \$5,966,000</b>					

#### **FY00 LUST CLEANUP PROJECTS TO BE FUNDED WITH PRIOR FISCAL YEAR CRF APPROPRIATIONS (i.e., \$0 sites)**

##### **ESTIMATED CLEANUP COSTS BY COUNTY**

<b>COUNTY</b>	<b>TOTAL ESTIMATED COST</b>	<b>NUMBER OF PROJECTS</b>	<b>COUNTY</b>	<b>TOTAL ESTIMATED COST</b>	<b>NUMBER OF PROJECTS</b>
Lenawee	\$60,000	1	Monroe	\$80,000	1
<b>TOTAL -- 2 sites -- \$140,000</b>					

The 31 LUST projects proposed for FY00 funding are described in the two lists provided on pages 5 through 8 and page 9. The first list (pages 5 through 8) includes projects to be funded with FY00 funds. The second list (page 9) includes projects to be funded with prior fiscal year appropriations. The projects are listed in county order and the following information is provided for each site:

- **County:** County in which the site is located.

- **Site Name and Address:** The name and address for the site.
- **Nature of Acute Risk:** A brief description of the acute human health or environmental risks associated with the site.
- **Action to be Taken:** A brief summary of the response actions proposed for the site.
- **Estimated Cost:** The estimated cost of completing the proposed actions.
- **FY00 Recommended Funds:** The amount of FY00 funds that STD estimates it will need to complete the project. For sites with a recommended amount of \$0, the actions will be funded by STD re-allocation of savings from previously appropriated cleanup funds.
- **District/Facility ID:** The STD district office which oversees the site and the identification number assigned to the facility.

### **LUST Contingencies/Emergency Cleanup Program:**

The STD proposes to use \$2,000,000 in FY00 Cleanup and Redevelopment Funds for contingencies and emergency actions as identified by the division. Examples for use of these funds:

- Abating imminent fire and explosion hazards.
- Abating imminent public health hazards.
- Mitigating the discharge of regulated substances to surface waters and other sensitive environmental receptors.
- Providing bottled water to residences with contaminated drinking water until there is permanent resolution.
- Emergency drinking water treatment technology or well replacements.
- Monitoring of drinking water wells that are threatened by contamination from LUSTs.
- Assessment of suspect sites to evaluate acute risk.



## SITE SUMMARIES

### PROPOSED FY00 STD CLEANUP AND REDEVELOPMENT PROJECTS FUNDED WITH FY00 APPROPRIATION

(IN COUNTY ORDER)

County	CRF Site Name/Address	Nature of Acute Risk	Action to be Taken	Estimated Cost	FY00 Recommended Funds	District/ Facility ID
Alcona	Somers Mobil 307 S. Second St. Lincoln	Free product has migrated from site and still may be on-site. Private water wells in area (no municipal water supply exists). Contaminated soils on and off-site. Contaminated groundwater. Unwilling/unable liable party.	Corrective action, investigate and define extent of free product, conduct free product removal and abatement, investigate extent of soil and groundwater contamination, perform receptor survey, Implement necessary controls to eliminate and/or reduce risk to receptors.	\$150,000	\$150,000	Cadillac 0-018751
Allegan	Fennville Feed Supply 301 E. Main St. Fennville	Free Product is migrating to off- site proper-ties. Possible fire and explosion hazard.	Determine extent of Free Product and remediate.	\$250,000	\$250,000	Plainwell 0-07401
Alpena	Former Dan's Party Store 3074 M-32 West Alpena	Contaminated groundwater < 2 years From potable water supply wells and wetlands.	Corrective action, operation, maintenance and monitoring of existing groundwater treatment system, and prepare closure report.	\$120,000	\$120,000	Cadillac 0-034265
Berrien	Frederick's Auto Clinic 106 East St. Joseph St. Watervliet	Free product from the facility has migrated across the street onto a neighboring property. Significantly impacted source soils remain at the facility. A drinking water well located downgradient of the facility (at a restaurant) was found to be impacted with 1,2-DCA. The property downgradient of the facility is a former gasoline station from which a release appears to have occurred.	Define the extent of free product, dissolved phase impact, and remaining source soils at Frederick's and the downgradient facility (People's State Bank); recover free product and alleviate the acute risk.	\$300,000	\$300,000	Plainwell 0-035207
Branch	K&H Tire and Alignment 242 E. Chicago Rd. Bronson	Free Product was found in 1994 and has not been addressed since. There may also be a threat to drinking water wells.	Determine the extent of free product and determine if there is an additional threat to drinking water wells, remediate free product and any additional threat.	\$146,000	\$146,000	Plainwell 0-037385

County	CRF Site Name/Address	Nature of Acute Risk	Action to be Taken	Estimated Cost	FY00 Recommended Funds	District/ Facility ID
Branch	Union City Diesel Corner of Coldwater Rd. and Crane St. Union City	Free Product was found in 1994 and has not been addressed since. There are also drinking water wells and a river less than 500 ft. from the release point.	Determine the extent of free product and whether there is a threat to any additional receptors and remediate.	\$500,000	\$500,000	Plainwell 0-002210
Calhoun	McLeieer Oil 4797 Capital Ave SW Battle Creek	The site is in a residential area with drinking water wells. The site has free product and there are still tanks present. At least one drinking water well has been impacted.	Remove the tanks, define the extent of free product and groundwater contamination and remediate contamination to reduce the risk.	\$500,000	\$500,000	Plainwell 0-013082
Clinton	Ackels Car Care 13636 Main St. Bath	Free product and drinking water threat.	Residential well sampling, free product removal, investigation and corrective action.	\$150,000	\$150,000	Shiawass ee 0-012654
Clinton	State Road Service 16040 S. US-27 Dewitt Township.	Potential fire and explosion hazard and possible drinking water threat.	Residential well sampling, investigation and corrective action.	\$160,000	\$160,000	Shiawass ee 0-015132
Eaton	City of Olivet Well #3 525 Church St. Olivet	Drinking water impact, free product, potential fire and explosion hazard, potential inhalation hazard.	Determine the source of BTEX and MTBE, in the bedrock aquifer. Perform a hydrogeological investigation in the bedrock aquifer.	\$250,000	\$250,000	Shiawass ee 5-002333
Genesee	Grand Blanc Amoco 11843 S. Saginaw Flint	Free product, fire and explosion threat.	Investigation, product recovery and corrective action.	\$125,000	\$125,000	Shiawass ee 0-019461
Genesee	Sunshine Foods #119 G-5516 Davison Rd. Burton	Abandoned (AOL site), Class 1, free product, fire and explosion threat.	Investigation and corrective action.	\$140,000	\$140,000	Shiawass ee 0-002199
Hillsdale	North Adams Convenience Store, 4000 Knowles Road North Adams	Free product remains on-site. Gasoline vapors have been present at excessive levels.	Conduct free product removal and reduce levels of groundwater contamination to reduce the vapor inhalation risk.	\$100,000	\$100,000	Jackson 0-015151
Ingham	Campus Marathon 504 Michigan Ave E. Lansing	Free product and fire and explosion hazard.	Investigation, product recovery and corrective action.	\$125,000	\$125,000	Shiawass ee 0-011012
Kalamazoo	Meijer Thrifty Acres 1225 W. Paterson Kalamazoo	Free product present downgradient of site, in residential neighborhood. Groundwater is encountered at approx. 7' BGL, and vapors have been identified in basements in area.	Delineate the extent of free product; delineate the extent of dissolved phase impact; recover free product and alleviate the acute risk.	\$300,000	\$300,000	Plainwell 5-001686

County	CRF Site Name/Address	Nature of Acute Risk	Action to be Taken	Estimated Cost	FY00 Recommended Funds	District/ Facility ID
Kalamazoo	Raitt Corporation 3735 Franklin St. Kalamazoo	Free product present at and potentially emanating from site. Groundwater encountered at approx. 15' below ground level. Residential wells located immediately downgradient of the facility.	Delineate the extent of free product; delineate the extent of dissolved phase impact; recover free product and alleviate the acute risk.	\$300,000	\$300,000	Plainwell 0-004971
Kent	Eastern Ave. Mobil Service. 3260 Eastern Ave. Grand Rapids	Free product present, owner non-viable. Inhalation hazard (vapors detected in adjacent bldg.), potential fire and explosion hazard.	Define extent of free product and dissolved gasoline plume, identify risks to receptors and implement corrective action.	\$250,000	\$250,000	Grand Rapids 0-034540
Kent	Third Base Inc. 427 East Main St. Lowell	Free product present, owner non-viable. Inhalation, fire & explosion hazard (vapors had been detected in bank bldg.).	Define extent of free product and dissolved gasoline plume, identify risks to receptors and implement corrective action.	\$250,000	\$250,000	Grand Rapids 0-018535
Lenawee	Irish Hills Party Store 7629 US 12 Onsted	Potential for impact to nearby Sand Lake and/or drinking water wells.	Determine the extent of the contamination in soil and groundwater, determine risk to Sand Lake, and eliminate potential for degradation to wells and Sand Lake.	\$60,000	\$60,000	Jackson 0-014478
Monroe	Waterstradt Bros. Tire Depot 16085 Tecumseh Rd. Dundee	Potential for impact to local wells. Lower bedrock aquifer has been impacted. Shallow soils are at/or near C-Sat levels, potential risk to utility workers in the area.	Determine extent of contamination in bedrock aquifer and in the shallow soil, determine level of risk to utility workers and eliminate hazard.	\$120,000	\$120,000	Jackson 0-016552
Muskegon	Lakeview Mart 1930 Lakeshore Drive Muskegon	Free product present, owner non-viable. Inhalation, fire & explosion hazard, potential surface water impact.	Define extent of free product and dissolved gasoline plume, identify risks to receptors and implement corrective action.	\$250,000	\$250,000	Grand Rapids 0-017965
Newaygo	Triangle Market 11680 Maple Island Rd. Fremont	Free product present, owner non-viable. Inhalation, fire & explosion hazard.	Define extent of free product and dissolved gasoline plume, identify risks to receptors and implement corrective action.	\$250,000	\$250,000	Grand Rapids 0-019832
Oakland	Sun Valley Properties 675 S. Saginaw Pontiac	UST's gone. Free product is present in old tank basin, product is present under the building.	Corrective action, implement corrective action plan to remediate acute risk (free product removal).	\$200,000	\$200,000	SEMI 0-037279
Osceola	Andy's Standard 303 S. Chestnut Reed City	4 abandoned tanks, soil contamination, C-Sat levels & indoor air, groundwater contamination direct contact, utilities within ground-water plume, Hersey River 1800 ft. down-gradient with MTBE ~ 75 ft. from river. Viability of liable party questionable.	Corrective action, remove four tanks and complete site assessment, remediate soil, conduct a remedial investigation and remediate groundwater.	\$125,000	\$125,000	Cadillac 0-004113

County	CRF Site Name/Address	Nature of Acute Risk	Action to be Taken	Estimated Cost	FY00 Recommended Funds	District/ Facility ID
Presque Isle	Former Alice's Restaurant 425 Main Street Millersburg	Free product, contaminated groundwater migrating off-site into utility corridors, causing risk of exposure to construction and/or utility workers.	Corrective action, free product investigation, operation, maintenance and monitoring of free product recovery system, limited hydrogeologic investigation to determine risk of exposure to potential receptors.	\$160,000	\$160,000	Cadillac 0-035664
Washtenaw	Arbor Wash (a.k.a. Whale of a Wash), 3031 Washtenaw Ave. Ann Arbor	Free product on site, impacted groundwater plume threatens nearby residential wells, vapors from free product and/or impacted groundwater have the potential for entering nearby business and residence.	Remove UST's from site, abate free product, define and evaluate impacted groundwater plume and remediate groundwater if necessary.	\$210,000	\$210,000	Jackson 0-003042
Washtenaw	Former Total #2542 445 S. Huron Street Ypsilanti	Free product is present on site and within the utility corridor off-site causing a fire and explosion hazard. The Huron River is nearby and down gradient from this site, there is potential for free product to vent into the river.	Determine the extent of free product and contaminated soil and groundwater, abate free product and impacted media that may degrade utilities.	\$200,000	\$200,000	Jackson 0-016419
Washtenaw	Madison and Main Streets Ann Arbor	Fire and explosion hazard due to free product and fumes entering into sewer system periodically. Abandoned UST's may be present.	Define extent of free product, abate fire and explosion hazard and fumes entering into sewer system, determine source, remove any abandoned UST's found.	\$175,000	\$175,000	Jackson 5-002357
Wexford	Mar-Lyns Lakeside Resort 1749 North Blvd. Cadillac	Soil contamination, free product, ground- water contamination health based RBSL's with a domestic well downgradient. Utilities within groundwater plume, wetland down- gradient, orphan site.	Corrective action, remediate soil, recover free product, Investigate utility corridor, remediate groundwater.	\$100,000	\$100,000	Cadillac 0-034776

## SITE SUMMARIES

### PROPOSED FY00 STD CLEANUP AND REDEVELOPMENT PROJECTS FUNDED WITH SAVINGS FROM PREVIOUS YEARS

(IN COUNTY ORDER)

County	CRF Site Name/Address	Nature of Acute Risk	Action to be Taken	Estimated Cost	FY00 Recommended Funds	District/ Facility ID
Lenawee	James Edwards Property 8230 Macon Rd. Macon	Contaminated soils beneath residence. Possible contamination to indoor air from soil vapors.	Determine extent of contamination, evaluate risk to residence and eliminate hazard.	\$60,000	\$-0-	Jackson 0-039815
Monroe	River Front Marina, 1560 E. Elm St. Monroe	Potential impact to River Raisin.	Determine extent of contamination, evaluate risk to river and eliminate hazard.	\$80,000	\$-0-	Jackson 0-018473

## SECTION II

### ENVIRONMENTAL RESPONSE DIVISION

#### FY00 CLEANUP AND REDEVELOPMENT PROGRAM

The ERD FY00 Cleanup and Redevelopment Program consists of state-conducted cleanups, including emergency cleanup actions.

State-funded cleanups, including emergency cleanup actions, are conducted in compliance with Part 201, which provides for state-funded cleanup activities at sites of environmental contamination where the liable party will not or cannot take the needed actions. Cleanup project funds are also used to match federal funds expended on cleanups at federal Superfund sites.

Section 13(5) of Part 201 directs that CRF expenditures first satisfy superfund match needs, emergency response needs, and actions to address acute health or environmental problems. If funds remain, 50 percent of the remainder is to be expended for response actions that facilitate the redevelopment of urbanized areas. The other 50 percent of the remainder is available to address non-acute health and environmental problems and to perform cleanups to facilitate redevelopment in non-urbanized areas.

To carry out its proposed FY00 Cleanup and Redevelopment Program, the ERD will use a combination of funding sources as summarized below:

<b>Funding Source</b>	<b>Cleanup Projects</b>	<b>Emergency Cleanup Actions/ Contingencies</b>
<b>FY00</b> Cleanup and Redevelopment Funds	\$3,234,000	\$2,000,000
<b>FY00</b> General Funds	\$13,118,600	\$0
ERD re-allocation of savings from prior fiscal years	\$3,802,800	\$0
<b>TOTALS</b>	<b>\$20,155,400</b>	<b>\$2,000,000</b>

#### ERD Cleanup and Redevelopment Projects

A total of 52 FY00 ERD projects at 51 cleanup sites -- 36 of which are being proposed by the ERD for state funding for the first time -- are proposed in this document. The total estimated cost of the 52 projects is \$20,155,400 as follows:

- A total of \$3,802,800 from savings of prior fiscal years will be used to fund a portion of the estimated costs at 21 sites. The remaining portion will come from a new appropriation as stated in following bullets.
- It is anticipated that during FY00, the ERD will be able to identify CRFs that have been appropriated for cleanup projects in prior fiscal years that are no longer needed for one or more reasons. Reasons may include: the liable party stepped in to complete the work, the work was completed for less than originally estimated, or the project was no longer needed

to achieve the ERD's cleanup goals for the site. As these savings are realized in FY00 they will be re-allocated by the ERD to provide the portion of funds needed for the 21 projects noted above and can be found in the tables below.

- A total of 52 projects are proposed for FY00 funding. The remaining estimated cost of the projects is \$16,352,600.

A summary of the 52 ERD projects proposed for FY00 -- **by project type** -- is provided below.

PROJECT TYPE	Number of Projects	Total Estimated Project Costs
<b>REDEVELOPMENT PROJECTS</b> <i>Projects that are being proposed because the sites have redevelopment potential. All of these sites <u>also</u> have an acute public health and/or environmental problem.</i>	8	\$2,425,000
<b>ACUTE HEALTH AND ENVIRONMENTAL PROJECTS</b> <i>Projects that are being proposed because the sites have an acute public health and/or environmental problem.</i>	39	\$16,262,400
<b>OPERATION AND MAINTENANCE PROJECTS</b> <i>Sites other than those noted above, that have an ongoing operation and maintenance need.</i>	3	\$590,000
<b>SUPERFUND MATCH PROJECTS</b> <i>Projects where state funds are being sought to match federal Superfund dollars.</i>	2	\$878,000
<b>TOTAL</b>	<b>52</b>	<b>\$20,155,400</b>

A summary of the proposed FY00 ERD Cleanup and Redevelopment projects – **by county** -- is provided in the chart below.

**PROPOSED FY00 ERD CLEANUP AND REDEVELOPMENT PROJECTS  
ESTIMATED COSTS BY COUNTY**

COUNTY	TOTAL ESTIMATED COST	NUMBER OF PROJECTS	COUNTY	TOTAL ESTIMATED COST	NUMBER OF PROJECTS
Alger	\$80,000	1	Lake	\$300,000	1
Allegan	\$750,000	2	Lapeer	\$1,600,000	1
Bay	\$100,000	1	Livingston	\$120,000	1
Calhoun	\$1,584,000	2	Macomb	\$850,000	2
Charlevoix	\$470,000	2	Manistee	\$2,400	1
Cheboygan	\$300,000	1	Monroe	\$1,610,000	2
Clare	\$1,500,000	1	Muskegon	\$500,000	1
Crawford	\$250,000	1	Oakland	\$1,100,000	2
Delta	\$250,000	1	Osceola	\$325,000	2
Eaton	\$618,000	3	Ottawa	\$6,000	1

COUNTY	TOTAL ESTIMATED COST	NUMBER OF PROJECTS	COUNTY	TOTAL ESTIMATED COST	NUMBER OF PROJECTS
Grand Traverse	\$250,000	1	Roscommon	\$150,000	1
Gratiot	\$510,000	1	Saginaw	\$25,000	1
Huron	\$85,000	2	Shiawassee	\$400,000	1
Iosco	\$300,000	1	St. Clair	\$1,100,000	1
Jackson	\$660,000	3	Washtenaw	\$1,800,000	4
Kalkaska	\$300,000	1	Wayne	\$2,160,000	5
Kent	\$100,000	1			
<b>GRAND TOTAL – 52 Projects -- \$20,155,400</b>					

### ERD Emergency Actions/Contingencies

The ERD proposes to use \$2,000,000 in FY00 CRF Funds for contingencies and emergency actions identified by the division as the need arises. Examples for the use of these funds include:

- Disposal of barrels that are a threat to public health and the environment.
- Assessment of suspect sites to evaluate acute risk.
- Cleanup of truck, tanker and railcar spills.
- Provide bottled water to residences at sites of environmental contamination where the groundwater is impacted.
- Abating an imminent threat to the public health caused by a release of a regulated substance to the environment.

### Projects Recommended For Funding

The 52 ERD Cleanup and Redevelopment Projects proposed for FY00 funding are described in the following lists: “Proposed FY00 ERD Cleanup and Redevelopment Projects” on pages A-1 through A-3; “Partially Funded with Prior Fiscal Year CRF” on pages B1 through B2; and Projects To Be Funded with FY00 Appropriations on pages C1 through C3. Within each section of the list, the projects are listed in county order and the following information is provided for each site:

- **Site ID #**-- Number used to identify the site within the state of Michigan
- **Site Name** – The name used most commonly for the site.
- **County** -- The county in which the site is located.
- **New Site** -- This column indicates if the site is being proposed by the ERD for state funding for the first time.



- **Acute Health or Environmental Problem** -- This column indicates if the project (in part or in its entirety) is being proposed by the ERD to address an acute public health and/or environmental problem.
- **Redevelopment Potential** -- This column indicates if the project is being proposed by the ERD because the site has redevelopment potential.
- **Project Type** -- This column provides a code which indicates the type of project proposed at the site for FY00, as described below:

**AW - Alternate Water:** AW projects consist of replacement of contaminated drinking water wells with new individual wells or extensions and connections to existing municipal water supply systems.

**RS - Response Activities:** RS projects include the full range of cleanup activities needed to investigate, secure, remove and/or treat contaminants to address an acute public health or environmental problem and/or to foster redevelopment of a contaminated site. Response activities include site fencing; source removal; the design, construction, and operation of groundwater and/or soil treatment systems and demolition. For some of these sites, the response activities will include investigation work to define the response activities that must be taken in FY00 or in future years.

**SF - Superfund Match:** SF funds are used at sites where state money is needed to match federal funds for cleanups at federal Superfund sites. The state's match obligations include: 10 percent of the cost of implementing the remediation at a Superfund site (i.e., construction of a treatment or containment system); 10 percent of the cost of operating a treatment system for the first ten years; 100 percent of all general operation and maintenance costs; and 100 percent of the costs of operating a treatment system after ten years.

- **Estimated Cost** -- This column provides the estimated cost of the actions proposed for FY00.
- **FY00 CRF** -- This column provides the amount of FY00 funds that ERD estimates it will need to complete the project. For sites with a recommendation below the estimated cost, the actions will be funded by ERD re-allocation of savings from previously appropriated cleanup funds.

After the project lists, a site summary is provided for each site. The site summaries are in county order. The site summary provides detailed site information including site history, current conditions, response activities completed to date, future response actions needed and a summary of the proposed FY00 project.

# Proposed FYOO ERD Cleanup and Redevelopment Projects

Site ID#	Site Name	County	Activity	New Site	Acute	Redevelopment	Estimated Cost	FYOO CRF
020008	Res Wells Eben Junction	Alger	RS		Yes		\$80,000	\$80,000
030003	A-1 Disposal LF	Allegan	RS		Yes		\$250,000	\$250,000
030032	Village of Douglas	Allegan	RS		Yes		\$500,000	\$500,000
090254	Amyotte-Kurzej a-Drako #1	Bay	RS	Yes	Yes		\$100,000	\$100,000
130354	Petco Albion-Scipio/Calhoun	Calhoun	RS	Yes	Yes		\$1,500,000	\$1,381,000
130360	West Urbandale Area Wells	Calhoun	AW	Yes	Yes		\$84,000	\$84,000
150010	DME Company	Charlevoix	RS	Yes	Yes		\$300,000	\$300,000
150014	Hooker's Dry Cleaners	Charlevoix	RS		Yes		\$170,000	\$170,000
160056	Lownsberry Salvage	Cheboygan	RS	Yes	Yes		\$300,000	\$300,000
180007	City of Clare Sanitary LF	Clare	RS	Yes	Yes		\$1,500,000	\$786,600
200073	Bear Archery Former	Crawford	RS	Yes	Yes		\$250,000	\$250,000
210087	Delta Chemical & Iron Co.	Delta	RS		Yes		\$250,000	\$250,000
230049	916 S. Main Street	Eaton	RS	Yes	Yes		\$100,000	\$100,000
230184	Olivet Well #3	Eaton	AW	Yes	Yes		\$150,000	\$150,000
280210	Woodmere Barrels	Grand Traverse	RS	Yes	Yes	Yes	\$250,000	\$250,000
290046	Gratiot County LF	Gratiot	SF		Yes		\$510,000	\$440,000
320082	Port Austin PCE Plume	Huron	RS	Yes	Yes		\$25,000	\$25,000
	Port Austin PCE Plume	Huron	AW	Yes	Yes		\$60,000	\$60,000
350096	PCE Plume East Tawas	Iosco	RS	Yes	Yes		\$300,000	\$300,000
380229	West Jackson GW Contam	Jackson	RS		Yes		\$10,000	\$10,000
380316	Motor State Oil & Gas	Jackson	RS	Yes	Yes		\$150,000	\$150,000
380318	Downtown Parma Wells	Jackson	RS		Yes		\$500,000	\$381,000
400052	Bay Oil Bulk Plant	Kalkaska	RS	Yes	Yes		\$300,000	\$300,000

# Proposed FYOO ERD Cleanup and Redevelopment Projects

Site 1D#	Site Name	County	Activity	New Site	Acute	Redevelopment	Estimated Cost	FYOO CRF
410113	Former Autostyle Plastics, Inc.	Kent	RS	Yes	Yes		\$100,000	\$0
430014	Ivan's Canoe Rental	Lake	RS	Yes	Yes		\$300,000	\$300,000
440171	Marathon Otter Lake Oil Field	Lapeer	RS		Yes		\$1,600,000	\$756,000
470012	Grossman Ideal Steel	Livingston	RS	Yes	Yes		\$120,000	\$120,000
500612	Superior Polishing	Macomb	RS	Yes	Yes	Yes	\$800,000	\$800,000
500698	Rub-A-Dub Cleaners	Macomb	RS	Yes	Yes	Yes	\$50,000	\$50,000
510147	Morton International Merkey 13 (City of Manistee Wells No. 6 & 7)	Manistee	AW	Yes	Yes		\$2,400	\$0
580024	Zieman Grames Rd Dump Site Area	Monroe	RS		Yes		\$1,050,000	\$881,000
580172	Good & Good/Deerfield/Monroe	Monroe	RS	Yes	Yes		\$560,000	\$441,000
610358	Muskegon River Drum Dump	Muskegon	RS	Yes	Yes		\$500,000	\$381,000
630165	Waterfield Hills Sanitary LF	Oakland	RS		Yes		\$410,000	\$350,000
631005	Coe's Cleaners	Oakland	RS	Yes	Yes		\$690,000	\$410,000
670072	Rohen LF	Osceola	RS	Yes	Yes		\$75,000	\$75,000
670076	Osceola Refinery Former	Osceola	RS	Yes	Yes	Yes	\$250,000	\$250,000
700024	Southwest Ottawa County LF	Ottawa	AW	Yes	Yes		\$6,000	\$0
720090	Federal Avenue Bulk Plant Former	Roscommon	RS	Yes	Yes	Yes	\$150,000	\$150,000
730433	Dixie and Maple Roads Resident	Saginaw	RS	Yes	Yes	Yes	\$25,000	\$25,000
740162	Huron Development Sanitary LF	St. Clair	RS		Yes		\$1,100,000	\$713,000
780002	Ann Arbor Railroad Yard	Shiawassee	RS	Yes	Yes	Yes	\$400,000	\$300,000

## Proposed FYOO ERD Cleanup and Redevelopment Projects

Site 1D#	Site Name	County	Activity	New Site	Acute	Redevelopment	Estimated Cost	FYOO CRF
810005	Armens Cleaners	Washtenaw	RS	Yes	Yes		\$200,000	\$200,000
810036	Staebler Road GW Contam	Washtenaw	RS		Yes		\$750,000	\$631,000
810482	Village of Dexter Municipal Wells	Washtenaw	RS		Yes		\$500,000	\$381,000
810490	320 N. Main	Washtenaw	RS	Yes	Yes		\$350,000	\$350,000
820056	Vulcan Mold & Iron Landfill	Wayne	RS	Yes	Yes		\$260,000	\$260,000
820208	General Oil Northville	Wayne	RS		Yes		\$1,000,000	\$1,000,000
821427	Feister Company	Wayne	RS	Yes	Yes		\$300,000	\$300,000
821634	CYB Tool (former)	Wayne	RS	Yes	Yes		\$100,000	\$100,000
821640	Michigan Tire Recycling	Wayne	RS	Yes	Yes	Yes	\$500,000	\$431,000
<b>GRAND TOTAL</b>							<b>\$20,155,400</b>	<b>\$16,352,600</b>

## Partially Funded with Prior Fiscal Year CRF

Site ID#	County	Site Name	Activity	New Site	Acute	Redevelopment	Est. Cost	FYOO CRF
030032	Allegan	Village of Douglas	RS		Yes		\$500,000	\$381,000
130354	Calhoun	Petco Albion-Scipio/Calhoun	RS	Yes	Yes		\$1,500,000	\$1,381,000
180007	Clare	City of Clare Sanitary LF	RS	Yes	Yes		\$1,500,000	\$786,600
290046	Gratiot	Gratiot County LF	SF				\$510,000	\$440,000
320082	Huron	Port Austin PCE Plume	AW	Yes	Yes		\$60,000	\$10,000
380318	Jackson	Downtown Parma Wells	RS		Yes		\$500,000	\$381,000
410113	Kent	Former Autostyle Plastics, Inc	RS	Yes	Yes		\$100,000	\$0
440171	Lapeer	Marathon Otter Lake Oil Field	RS		Yes		\$1,600,000	\$756,000
500612	Macomb	Superior Plating	RS	Yes	Yes	Yes	\$800,000	\$681,000
510147	Manistee	Morton International Merkey 13 (City of Manistee Wells No. 6 and 7)	AW	Yes	Yes		\$2,400	\$0
580024	Monroe	Zieman Grames Rds Dump Site Area	RS		Yes		\$1,050,000	\$881,000
580172	Monroe	Good & Good/Deerfield/Monroe	RS	Yes	Yes		\$560,000	\$441,000
610358	Muskegon	Muskegon River Drum Dump	RS	Yes	Yes		\$500,000	\$381,000
630165	Oakland	Coe's Cleaners	RS	Yes	Yes		\$690,000	\$410,000
700024	St. Clair	Huron Development Sanitary LF	RS		Yes		\$1,100,000	\$713,000
780002	Shiawassee	Ann Arbor Railroad Yard	RS	Yes	Yes	Yes	\$400,000	\$300,000
810036	Washtenaw	Staebler Road	RS		Yes		\$750,000	\$631,000
810482	Washtenaw	GW Contam Village of Dexter	RS		Yes		\$500,000	\$381,000
821640	Wayne	Municipal Wells Michigan Tire Recycling	RS	Yes	Yes	Yes	\$500,000	\$431,000
<b>GRAND TOTAL</b>							<b>\$13,538,400</b>	<b>\$9,735,600</b>

# Projects To Be Funded With FYOO Appropriations

Site ID#	County	Site Name	Activity	New Site	Acute	Redevelopment	Est. Cost	FYOO CRF
020008	Alger	Res Wells	RS		Yes		\$80,000	\$80,000
030003	Allegan	Eben Junction A-1 Disposal Landfill	RS		Yes		\$250,000	\$250,000
090254	Bay	Amyotte- Kurzeja-Drako #1	RS	Yes	Yes		\$100,000	\$100,000
130360	Calhoun	West Urbandale Area Wells	AW	Yes	Yes		\$84,000	\$84,000
150010	Charlevoix	DME Company	RS	Yes	Yes		\$300,000	\$300,000
150014	Charlevoix	Hooker's Dry Cleaners	RS		Yes		\$170,000	\$170,000
160056	Cheboygan	Lownsberry Salvage	RS	Yes	Yes		\$300,000	\$300,000
200073	Crawford	Bear Archery Former	RS	Yes	Yes		\$250,000	\$250,000
210087	Delta	Delta Chemical & Iron Co.	RS		Yes		\$250,000	\$250,000
230010	Eaton	Parsons Chemical	SF		Yes		\$368,000	\$368,000
230049	Eaton	916 S. Main Street (Hungry Howie's)	RS	Yes	Yes		\$100,000	\$100,000
230184	Eaton	Olivet Well #3	AW	Yes	Yes		\$150,000	\$150,000
280210	Grand Traverse	Woodmere Barrels	RS	Yes	Yes	Yes	\$250,000	\$250,000
320082	Huron	Port Austin PCE Plume	RS	Yes	Yes		\$25,000	\$25,000
350096	Iosco	PCE Plume East Tawas	RS	Yes	Yes		\$300,000	\$300,000
380229	Jackson	West Jackson GW Contam	RS		Yes		\$10,000	\$10,000
380316	Jackson	Motor State Oil & Grease	RS	Yes	Yes		\$150,000	\$150,000
400052	Kalkaska	Bay Oil Bulk Plant	RS	Yes	Yes		\$300,000	\$300,000
430014	Lake	Ivan's Canoe Rental	RS	Yes	Yes		\$300,000	\$300,000
470012	Livingston	Grossman Ideal Steel	RS	Yes	Yes		\$120,000	\$120,000
500698	Macomb	Rub-A-Dub Cleaners	RS	Yes	Yes	Yes	\$50,000	\$50,000
670072	Osceola	Rohen Landfill	RS	Yes	Yes		\$75,000	\$75,000
670076	Osceola	Osceola Refinery Former	RS	Yes	Yes	Yes	\$250,000	\$250,000
720090	Roscommon	Federal Avenue Bulk Plant Former	RS	Yes	Yes	Yes	\$150,000	\$150,000
730433	Saginaw	Dixie and Maple Roads Resident	RS	Yes	Yes	Yes	\$25,000	\$25,000
810005	Washtenaw	Armens Cleaners	RS	Yes	Yes		\$200,000	\$200,000

## Projects To Be Funded With FYOO Appropriations

Site ID#	County	Site Name	Activity	New Site	Acute	Redevelopment	Est. Cost	FYOO CRF
810490	Washtenaw	320 N. Main	RS	Yes	Yes		\$350,000	\$350,000
820056	Wayne	Vulan Mold & Iron Landfill	RS	Yes	Yes		\$260,000	\$260,000
820208	Wayne	General Oil Northville	RS		Yes		\$1,000,000	\$1,000,000
821427	Wayne	Feister Oil Company	RS	Yes	Yes		\$300,000	\$300,000
821634	Wayne	CYB Tool (former)	RS	Yes	Yes		\$100,000	\$100,000
<b>GRAND TOTAL</b>							<b>\$6,617,000</b>	<b>\$6,617,000</b>

**SITE SUMMARIES**

**PROPOSED FY00 ERD CLEANUP AND REDEVELOPMENT AND ENVIRONMENTAL  
PROTECTION BOND PROJECTS**

(IN COUNTY ORDER)



## SITE SUMMARY

### Site Name

Res Wells Eben Jct  
M-94 & H-01  
Eben Junction, Michigan

### County: Alger

MDEQ District: Marquette

Site ID#: 020008

MAIN Project#: 453143

Site Score: 37

### LOCATION

Eben Junction is a small community at the crossroads of United States Forest Service Highway H-01 and State Highway M-94 in Rock River Township, Alger County. A thin layer of glacially derived soils exists in this locality, underlain by highly-fractured limestone/dolomitic bedrock. Slapneck Creek flows approximately 1/2 mile north of the crossroads.

### SITE HISTORY

In the late 1970s, the local health department found that several private water supply wells in this community were contaminated by fuel oil. In 1985, a new, privately constructed well was found to have a gasoline/oil odor and an oily fuel film on the water. From the fall of 1986 through the summer of 1987, at least four residential wells were found contaminated with petroleum constituents such as benzene at 31 ug/L. A Leaking Underground Storage Tank (LUST) funded investigation by the Michigan Department of Natural Resources (MDNR), Geological Services Section, conducted in the fall of 1987, identified three plumes of groundwater contamination from three separate sources, two involving underground storage tanks (USTs). Two of these plumes were found to be commingled and included a large volume of free-floating petroleum within the bedrock aquifer. Nearly eleven feet of petroleum was measured in one well. The MDNR notified the owner/operators of the suspected contaminant sources and requested that they perform work needed to further delineate the contamination and take corrective actions. At that time, none of these notified parties agreed to perform the requested work.

The affected shallow aquifer provided water for all the residential wells in the community. Because of the multiple contaminant sources, the large volume of petroleum floating in the aquifer and the highly variable and unpredictable groundwater flow in the fractured limestone, the Michigan Department of Public Health (MDPH) determined the entire community of Eben was at risk. The MDPH extended the community water supply system from a neighboring village, nearly one mile away, to serve the entire community of Eben.

In 1992, the MDNR used Bond funds to conduct two concurrent projects: one to investigate the contamination more comprehensively (Remedial Investigation, "RI") and one to collect data sufficient to design a capture system for the free-floating petroleum (Interim Response, "IR"). The investigation identified three plumes of groundwater contamination, two of which are commingled and include significant amounts of petroleum floating on the water in the shallow bedrock aquifer. The commingled plumes cover an area approximately 24 acres in size and extend to at least 64 feet deep. The other plume was approximately 150 by 300 feet in area. None of the plumes were found to have migrated close to Slapneck Creek and the configuration of the plumes appeared stable throughout the RI.

During the MDNR's investigation, the Michigan State Police Fire Marshal Division ordered the Unity Cooperative Corporation (UCC) to take their USTs out of service. Almost immediately, the layer of petroleum floating in a monitor well on the UCC property dropped from over six feet to around three feet thick. The UCC later removed the USTs and the surrounding, highly contaminated fill and then began their own investigations and interim response (soil removal and

recovery of the free-floating petroleum), both being Michigan Underground Storage Tank Financial Assurance (MUSTFA) eligible projects.

An acute environmental threat exists in Eben due to the continued presence of free product which, if it should migrate might not only cause the now-stable dissolved plume to spread and contaminate additional residential water supplies but also could cause fire and explosion concerns in area houses.

### **SITE STATUS**

The Michigan Department of Environmental Quality (MDEQ) RI project was completed in 1993, having verified the three sources of contamination. While the vertical extent of the commingled plumes is not completely delineated, enough information has been collected for the design of a system to recover the free-floating petroleum. The initial phase of the IR was completed in 1995, when MDEQ removed contaminated soils and USTs from two of the three source areas, while the owner of the third source (UCC) conducted similar actions under the MUSTFAA program. All work by the UCC ceased in 1995 when MUSTFAA reimbursement ceased statewide. The MDEQ is now implementing Phase II of the IR with the installation and operation of free product recovery systems at the UCC and another adjacent source, Nifty-Thrifty Inc. Continued funding of a cleanup system is needed to abate the acute environmental threat posed by the free product. This action should ultimately enhance development opportunities within the affected area.

### **ENFORCEMENT STATUS**

In April of 1992, under the authority of Rule 115, notification letters were issued to six parties. Only one of these parties, the UCC, has responded favorably.

### **RESPONSE ACCOMPLISHMENTS**

### **EXPENDITURES**

#### **ALTERNATE WATER**

**\$1,130,231**

Due to uncertainties with the extent of contamination, the large volumes of petroleum detected in two monitor wells, and the number of residences potentially at risk, MDPH determined the entire community was at risk and issued a water consumption advisory. A project was developed to extend the water supply system from the nearby community of Chatham to serve the entire Eben community. The system was completed in spring 1992.

#### **BOTTLED WATER/EMERGENCY WELL REPLACEMENT**

**\$31,296**

The MDPH used both Act 307 and Bond funds to deliver bottled water from March of 1987 through September of 1988. Act 307 funds were also used for the emergency replacement of two residential wells.

#### **INTERIM RESPONSE**

**\$752,000**

Bond funds were used to conduct aquifer testing to determine if recovery of the free-floating petroleum was feasible. This evaluation was complicated by the characteristics of the fractured bedrock aquifer and seasonal fluctuations in groundwater flow. Two large diameter recovery wells were installed and two pumping tests conducted. Three vent wells also were installed to test the feasibility of vapor recovery in enhancing the rate of petroleum removal from the bedrock fractures. The results indicated that vapor removal is impracticable and that the accumulation of the petroleum is too slow to allow use of an active pumping system.

Bond funds were subsequently used to conduct a surface cleanup at two of the three contaminant sources. Initial work included the analysis of 40 soil samples to delineate the extent of the contaminated soil that would require removal and to characterize the

waste from various abandoned containers and USTs. Removal work involved the demolition of a building, removal of five USTs and numerous aboveground storage tank cradles, disposal of 2,900 cubic yards of soil and 11,130 gallons of contaminated water. Thirty-three confirmatory soil samples were analyzed prior to backfilling the excavations.

The feasibility of recovering free-floating petroleum is being evaluated through the operation of a pilot study of large capacity collectors at two locations. Two six inch diameter recovery wells have been installed, one near each of the two source areas. A treatment system has been installed for each of these wells. Collectors are skimming petroleum that passively accumulates in the wells and transferring it to a large capacity holding vessel. These systems will be evaluated after a full year of operation to determine if such collectors are adequate and if additional capacity is needed.

An augmentation to the existing work plan has been approved for the winterization of the treatment systems, contracting with an Operation and Maintenance service provider and completion of the pilot free product recovery study.

**Private funds -- \$118,828 (MUSTFAA)**

In addition, the UCC attempted to recover free-floating petroleum from one monitor well, but experienced difficulties due to extremely slow product accumulation rates. They removed most of the contaminated soils and both USTs on the site and had planned to finish soil removal once their outstanding MUSTFAA invoices were reimbursed. This has not occurred and the property has been sold.

**REMEDIAL INVESTIGATION/FEASIBILITY STUDY**

**\$319,000**

The MDNR initially installed 13 monitor wells in the bedrock aquifer using LUST Trust Funds from 1988-1990. Two of these wells have continuously contained petroleum floating on the water table; never more than 6 inches in one, but as much as 11 feet in the other. Three sources of released petroleum were identified and, in the absence of a commitment from the notified parties to do work at that time, the MDNR used Bond funds to perform the needed additional investigation.

Ten shallow and fourteen deep monitor wells were installed at fifteen locations. This investigation was complicated by complex bedrock fracture patterns and seasonal fluctuations in groundwater flow. The information gathered indicates that free product remains in the two monitor wells and one large diameter pumping well and the shape and size of the plumes remain constant. In addition, the information revealed the bedrock aquifer is suited to groundwater pump and treat technology, but the recovery rate of the free-floating petroleum is such that only passive recovery is practical.

**FUTURE RESPONSE NEEDS**

**PROJECTED COST**

The groundwater contaminant plumes have remained stable in configuration during the RI and it is expected that they will naturally attenuate in the absence of contaminant sources. Recovery of the free-floating petroleum is needed at two of the source properties, the UCC and Nifty-Thrifty Inc. which is immediately upgradient from the UCC. Other contaminant sources have been removed. The potential human health threat posed by the contaminated groundwater has been abated with the extension of a community water supply system to this area.

**OPERATION AND MAINTENANCE**

**\$100,000**

It is estimated that semi-weekly inspections of the passive collection systems will be necessary to ensure that the petroleum which accumulates in the wells is being properly removed and contained. It would also be necessary to pay for shipments of the recovered

petroleum to a disposal or recycling facility. These tasks are likely to cost up to \$100,000 for the first five years of system operation. Fiscal year 98 funding for \$20,000 has been appropriated. Funds are being requested.

## FUNDING HISTORY

General Fund Authorizations			Bond Fund Appropriations						
YEAR	ACTION	AMOUNT	YEAR	ACTION	AMOUNT	ACTION	AMOUNT	ACTION	AMOUNT
1987	AW	\$21,000	1990	AW	\$940,000				
			1991	IR	\$500,000 <sup>1</sup>				
			1992	RI	\$300,000 <sup>2</sup>				
			1993	AW	\$235,000	RD	\$0		
			1994	AW	\$225,000				
			1998	OM	\$20,000				

## FY00 PROPOSED ACTION

Eighty thousand dollars (\$80,000) of additional operation and maintenance funding is requested to maintain and operate the free product collection systems for the first five years.

\*Note\* As of October 1995, the cleanup program responsibilities were transferred from the Michigan Department of Natural Resources (MDNR) to the Michigan Department of Environmental Quality (MDEQ). As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) for water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ

<sup>1</sup> \$390,000 was transferred to this activity from another Bond site.

<sup>2</sup> \$50,000 was transferred to this activity from another Bond site.

## SITE SUMMARY

### Site Name

A1 Disposal Landfill  
2371 105th Avenue  
Otsego, Michigan

County: Allegan

MDEQ District: Plainwell/ERD/DWRPD

Site ID#: 030003

MAIN Project#: 450204

Site Score: 33

### LOCATION

The A1 Disposal Landfill site is located in rural Allegan County approximately seven miles west of the city of Otsego, and three-fourths of a mile south and west of the Kalamazoo River. Agricultural land and forest surround the site. Land use is mostly agricultural and recreational.

### SITE HISTORY

The A-1 Disposal Landfill, in addition to disposal practices, was utilized as a storage area for wastes accumulated by A-1 Disposal Corporation. The landfill was unregulated and these activities occurred prior to current hazardous waste regulations. At one time, 1,400 barrels and three to five 1,000-gallon underground storage tanks were reported on-site. Photos taken at the site during the time of operation indicate a large number of barrels being stored and areas of possible spillage of wastes. There are no records to show the barrels were properly disposed.

In 1989, surface soils at the site were tested and found to contain metals and waste solvents above the health based values. In addition, the soils showed impact from polynuclear aromatic hydrocarbons and pesticides.

Results of later investigations identified an area of buried drums and two groundwater plumes emanating from the site in two different aquifers. The aquifers, and corresponding plumes, are traveling in different directions. One groundwater plume contains trichloroethylene contamination at over 500 times the level of the health based drinking water value, while the other plume has the same contaminant at over 100 times the value. If the plumes are not addressed, the estimated time it will take for one, or both, to impact the Kalamazoo River is 20 to 40 years. There is a potential for eight household wells to be contaminated by one plume and four wells by the other. The drums are considered a continuing source and, combined with the depth to groundwater, could contribute to groundwater contamination for the next 100 years.

### SITE STATUS

The site tax-reverted to the state in 1989. Groundwater remediation was initiated for one of the two-contaminant plumes in 1995 and continues to operate. The state has recently completed the removal of over 1,800 drums, three discarded underground storage tanks, and 1,800 tons of characteristically hazardous soil from the landfill. Identification of person(s), whose possible liability has yet to be determined, will be initiated following the removal of the drummed waste.

### ENFORCEMENT STATUS

The landfill was owned and operated by the bankrupt A1 Disposal Corporation (A1). The state intends to identify generators in an attempt to recover past investigation and response costs, and to complete soil and groundwater remediation at the site. The Environmental Response Division has not yet determined the project closure target for this site. It will be determined following the completion of the remedial investigation and feasibility study.

**RESPONSE ACCOMPLISHMENTS****EXPENDITURES****ALTERNATE WATER****\$1,864**

Bond contingency funds have been authorized to the Drinking Water and Radiological Protection Division to monitor downgradient drinking water wells.

**INTERIM RESPONSE****\$2,040,000**

The site was fenced in 1991 to limit human and animal exposure to surface contamination. In 1994, the Michigan Department of Natural Resources (MDNR) initiated groundwater cleanup of the more highly contaminated north plume using activated carbon filtration of contaminated water. To date, in excess of nine million gallons of groundwater have been treated.

In 1995 and 1996, the Michigan Department of Environmental Quality (MEDQ) removed and properly disposed of over 1,800 drums, three discarded underground storage tanks, and a cyanide reduction vat believed to have come from the A1 Disposal Corporation. Most of these drums and all three underground storage tanks contained hazardous waste. Following the removal of the drums, a limited soil contamination investigation in the areas where they were buried revealed the soil directly beneath the drum trenches, if removed, would be considered a hazardous waste.

**REMEDIAL INVESTIGATION****\$1,371,000**

In 1991 the MDNR performed a limited investigation into the subsurface contamination at the site. This investigation included performing a Magnetometer (metal detection) survey to ascertain if there were areas of buried metal (possibly barrels) at the site. The Magnetometer survey located 8 areas that appeared to contain high concentrations of metal suspected to be drums. This investigation also included the installation of 8 monitoring wells to determine groundwater quality and flow direction. It was determined that the groundwater was contaminated with a number of solvents, predominantly trichloroethylene and 1,1,1-trichloroethane.

In subsequent investigations conducted in 1992 and 1993, buried drums, some containing unknown liquids, were discovered in test pits excavated in the areas outlined by the magnetometer survey. Soil samples in one test pit revealed methylene chloride contamination at almost 200 times the health based value for this contaminant in soil. Soil samples from another test pit contained over 100 times the groundwater protective value for cyanide. Given the size of the test pit area that confirmed the presence of barrels, the estimated number of barrels range from 1,000 to 9,000.

The MDNR also completed 21 additional soil borings that vertically profiled the groundwater, 11 of which were developed into monitoring wells and two were developed into test wells. One test well was located in what is currently identified as the most contaminated portion of the north plume. The other test well was located within 100 feet of what is believed to be the trailing edge of the same plume. A pump test was performed to determine if a closed-loop (pump-treat-reinject) groundwater treatment system would work. Results of the pump test verified the applicability of such a system at the site.

A third phase of groundwater investigation was conducted in 1994 and 1995. During this phase the MDNR delineated the down gradient extent of the north contamination plume and also identified a point close to the down gradient limit of the south plume. This investigation also revealed a level of groundwater contamination closer to the source of the south plume than was previously unidentified.



In addition, the MDNR is working with the Michigan Department of Public Health to Semi-annually monitor the down gradient household wells.

**FUTURE RESPONSE NEEDS****PROJECTED COST**

At this point in time, the only state-funded response action planned at this site is operation and maintenance of the existing groundwater treatment system for the north plume. The need for additional state-funded actions will be based on the results of current efforts to identify and compel liable parties to complete soil and groundwater remediation at this site.

**REMEDIAL INVESTIGATION/ FEASIBILITY STUDY****\$300,000**

Additional investigation into the south groundwater is necessary to determine aquifer characteristics near the drum trench considered the source of contamination. Soils beneath the drum trenches are highly contaminated. Further investigation is necessary to determine the full extent and level of soil contamination in these areas. A feasibility study of both groundwater and soil remediation is necessary to determine the most technically appropriate method for remediation of the respective environmental contamination problems.

**REMEDIAL DESIGN****\$250,000**

The remedial design for this site should include both groundwater and soil remediation.

**REMEDIAL ACTION****\$2,100,000**

Additional response actions might include installation of remediation systems in the soils beneath the drum trenches, groundwater treatment in the south plume, and augmentation of the groundwater system currently operating in the north plume.

**OPERATION AND MAINTENANCE****\$750,000**

There is the need to maintain the existing groundwater treatment system at a cost of about \$200,000 per year. In addition, if additional state-funded remediation systems are constructed there will be associated operation and maintenance costs.

**SPECIAL CONSIDERATIONS**

A-1 Disposal Landfill is located on top of a geologic formation called an end moraine, or location where a glacier deposited material as it melted. This fact complicates investigation and remediation of this site for two reasons. First, the surrounding terrain has very steep and heavily forested slopes, making access to drilling sites difficult, if not impossible. Second, groundwater at the landfill is 160 to 180 feet below the ground surface, requiring use of special drilling equipment. Also, due to the nature of the groundwater contaminants, the highest level of groundwater contamination in what is currently the farthest downgradient well in the north groundwater plume is 225 feet below the ground surface. Staff geologists predict the plume will continue sinking in the aquifer until it eventually discharges into the Kalamazoo River.

**FUNDING HISTORY**

General Fund Authorizations			Bond Fund Appropriations						
Year	Action	Amount	Year	Action	Amount	Action	Amount	Action	Amount
1990	IR	\$40,000	1992	RI	\$500,000 <sup>t1</sup>				
			1993	IR	\$0 <sup>t2</sup>				
			1994	IR	\$0	RD	\$0		
			1998	OM	\$20,000				

Bond contingency funds were authorized for monitoring at nearby residential drinking water wells.

**FY00 PROPOSED ACTIONS**

Two hundred fifty thousand dollars (\$250,000) are requested to design the soil and groundwater remediation systems. In addition, three hundred thousand dollars (\$300,000) are requested to be transferred from savings from other sites to further investigate soil and a second groundwater plume not yet remediated

\*Note\* As of October 1995, the cleanup program responsibilities were transferred from the Michigan Department of Natural Resources to the Michigan Department of Environmental Quality (MDEQ). As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ.

<sup>t1</sup> An additional \$871,000 were transferred to this activity from another Bond site.

<sup>t2</sup> \$2,240,000 were transferred to this activity from another Bond site.



## SITE SUMMARY

### Site Name

Village of Douglas Contamination  
200 Washington Road  
Douglas, Michigan

County: Allegan

MDEQ District: Plainwell/DWRPD

Site ID#: 030032

MAIN Project#: 450889

Site Score: 45

### LOCATION

The facility is located in an industrial/commercial area in the southern portion of the village of Douglas. The solvent plume emanating from the facility has impacted residential properties.

### SITE HISTORY

In March 1986, routine sampling detected the presence of volatile organic compounds (VOCs) in two municipal wells in the village of Douglas. The municipal wells were replaced with private and state funds. The current owner/operator completed significant investigation and had installed a groundwater treatment system which they subsequently removed. Release(s) to the ground surface, lagoons, etc. have resulted in a VOC plume in the groundwater emanating from site. Trichloroethylene (TCE) is found in the water and sediments of Wickes Creek, a downgradient surface water body, at up to 700 parts per billion (ppb) and up to 63,000 ppb respectively in March 1997 samples. The groundwater/surface water interface value (GSI) and residential drinking water criteria for this compound are 94 ppb and 100 ppb. TCE has also been detected in the groundwater at up to 160,000 ppb; the residential drinking water criterion is five ppb. The VOC contamination poses an acute environmental and public health threat. In the early 1990s, the United States Environmental Protection Agency (USEPA) oversaw the removal of stream sediments related to surface water discharge to stream on the east side of the facility. Samples taken in 1997 confirm the contaminant concentrations found in the soil and groundwater.

### SITE STATUS

The Michigan Department of Environmental Quality's (MDEQ) decision to not accept Haworth's offer to take over, initiate, and continue operation of the installed groundwater treatment system has resulted in Haworth removing the previously installed system.

### ENFORCEMENT STATUS

A formal information request has been sent to the potential liable party (PLP) for liability determination. The information submitted by the PLP indicated that liability could not be determined from the current site data.

### RESPONSE ACCOMPLISHMENTS

### EXPENDITURES

#### MUNICIPAL WATER

private funds -- \$600,000; state -- \$300,000

A municipal water system has been in operation for several years.

#### REMEDIAL INVESTIGATION

state -- \$61,000

State funds were expended to install 14 monitoring wells.

**REMEDIAL ACTION****private funds -- unknown**

A groundwater treatment system was installed. The system was removed by current owner/operator in 1996.

**FUTURE RESPONSE NEEDS****PROJECTED COST****REMEDIAL ACTION****\$1,500,000**

Install and operate groundwater remediation and soil/source remediation systems. Funds were appropriated for this action in FY99.

**OPERATION AND MAINTENANCE****\$1,000,000**

Operate systems for the period of time (estimated at 10 years) necessary to comply with appropriate criteria. In FY99, \$150,000 were appropriated for this action.

**FUNDING HISTORY**

General Fund Authorizations			Bond Fund Appropriations				
YEAR	ACTION	AMOUNT	YEAR	ACTION	AMOUNT	ACTION	AMOUNT
1987	AW	\$11,000	1989	RI	\$200,000 <sup>t4</sup>		
1987	IR	\$48,200	1990	RI	\$150,000 <sup>t3</sup>		
1988	IR	\$5,000	1991	MW	\$500,000 <sup>t1</sup>	RD	\$200,000 <sup>t2</sup>
			1999	RA	\$1,500,000	OM	\$150,000

**FY00 PROPOSED ACTION**

Three hundred eighty one thousand dollars (\$381,000) along with \$119,000 savings at other sites (for a total of \$500,000) are requested to operate and maintain the groundwater and soil treatment systems for the next five years.

\*Note\* As of October 1995, the cleanup program responsibilities were transferred from the Michigan Department of Natural Resources (MDNR) to the Michigan Department of Environmental Quality (MDEQ). As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) for water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ.

<sup>t4</sup> \$190,000 were transferred from this activity to another Bond site.

<sup>t3</sup> \$150,000 were transferred from this activity to another Bond site.

<sup>t1</sup> \$417,820 were transferred from this activity to another Bond site.

<sup>t2</sup> \$200,000 were transferred from this activity to another Bond site.

## SITE SUMMARY

### **Site Name**

Amyotte-Kurzeja-Drako #1  
Section 35, SE/4, SW/4,  
Pinconning Township, Michigan

**County:** Bay

**MDEQ District:** Saginaw Bay/GSD

**Site ID#:** 090254

**MAIN Project#:** 455230

**Site Score:** 30

### **LOCATION**

The site is located in Pinconning Township in Bay County off Kaiser Road. The property use is residential.

### **SITE HISTORY**

The Amyotte-Kurzeja-Drako #1 was an oil well drilled by the Swan King Oil Company in 1947 and produced from the Dundee formation until 1953. The well was plugged in 1954. The present landowner discovered the well leaking in 1993 and reported it to the Geological Survey Division (GSD), Saginaw Bay District Office. Mr. George Swan was notified by the GSD in 1993 that the well his company had previously plugged was leaking. Mr. Swan refused to re-enter and properly plug the well.

An acute public health and environmental problem exists due to the fact that crude oil is floating on the groundwater in an excavation around the well head. The water table is approximately three to four feet from ground surface. Soil and groundwater samples taken at the site in 1995 confirm elevated concentrations of benzene in the soil (495µg/k) and ground water (53 part per billion). The site is being recommended for funding because of the acute environmental and public health problem at the site.

### **SITE STATUS**

The present landowner is Mr. Alfred Bodrie, 3150 Kaiser Road, Pinconning, Michigan. The present owner is not liable under Part 201. Mr. Swan refuses to take action toward re-entering and properly plugging the well. Concentrations of benzene are still elevated, and crude oil is still floating on the water table.

### **ENFORCEMENT STATUS**

The case has been referred to the GSD Compliance Unit for escalated enforcement action. Mr. Swan is no longer active as an oil and gas producer and is not expected to take any action toward properly plugging the well. The GSD intends to pursue Mr. Swan for cost recovery of all funds expended to properly plug the well.

**FUTURE RESPONSE NEEDS****PROJECTED COST****INTERIM RESPONSE****\$100,000**

Funding is needed in order to re-enter the well and properly plug it, remove oily soils and fluids, and restore the site.

**FUNDING HISTORY**

No state funds have been appropriated or expended at this site.

**FY00 PROPOSED ACTION**

One hundred thousand dollars (\$100,000) are being requested to perform the interim response. This includes re-entering the well and plugging it, removing oily soils and fluids encountered, and restoring the site.

\*Note\* As of October 1995, the cleanup program responsibilities were transferred from the Michigan Department of Natural Resources (MDNR) to the Michigan Department of Environmental Quality (MDEQ). As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) for water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ.

## SITE SUMMARY

### **Site Name**

Petco Albion-Scipio/Calhoun  
Petco Petroleum Corporation  
Albion Township, Michigan

**County:** Calhoun

**MDEQ District:** Plainwell/GSD

**Site ID#:** 130354

**MAIN Project #:** 454936

**Site Score:** 21

### **LOCATION**

The Albion-Scipio Oil Field trends northwest to southeast and covers several sections and townships in Calhoun and Jackson County. Petco Petroleum Corporation (Petco) wells in Calhoun County are located in Section 14 of Albion Township through Section 12 of Homer Township. Land use in the area is agricultural and residential.

### **SITE HISTORY**

Petco currently owns 70 wells and 22 tank batteries in the Albion-Scipio Oil Field in Calhoun and Jackson counties. The wells were drilled in the late 1950s and early 1960s for the production of hydrocarbons. The wells were initially owned and operated by the Humble Oil Company, which later became the Exxon Corporation. In October 1990, the Exxon Corporation transferred all their wells to the current owner, Petco.

Due to numerous unremediated spills of oil and brine from the wells and associated production equipment, the Michigan Department of Natural Resources (MDNR), Office of Litigation and Program Services, Law Division, and the Geological Survey Division began enforcement actions in 1991. Investigations conducted at the well sites and associated production facilities found visual contamination of the soil from crude oil. Soil samples taken indicated elevated levels of benzene, toluene, ethylbenzene, xylene, total petroleum hydrocarbons (TPHDRO) and chlorides.

In Calhoun County, Petco is responsible for 36 wells and 9 associated tank batteries. The highest concentrations found at various well sites were 9,590 parts per billion (ppb) of benzene, 17,000 ppb of toluene, 240,000 ppm of TPHDRO, and 613 ppm of chloride. All the wells are shut in and none have been properly plugged and abandoned. Many of the well sites have had various pieces of operating equipment removed, electricity has been shut off, and a nearby gas gathering plant has been closed. Corrosion and deterioration of equipment at the improperly abandoned facilities increase the risk of further contamination to the environment and pose an acute public health threat due to the potential for the release of deadly hydrogen sulfide gas.

### **SITE STATUS**

Petco has abandoned operations on all of their 70 wells and 22 tank batteries in the Albion-Scipio Field. The wells remain unplugged and improperly abandoned and the associated production equipment, such as flowlines and vessels containing fluids, continues to be a possible source for further contamination. Contamination throughout Petco's 36 wells and 9 associated tank batteries located in the Albion-Scipio/Calhoun County Field continues to go unremediated. Recent analyses of soils collected from many of the wells and associated production areas indicate levels of contamination for benzene, toluene, and chlorides are above current residential cleanup criteria.

**ENFORCEMENT STATUS**

The Geological Survey Division (GSD), Compliance Unit, has issued Notices of Noncompliance and Notices of Violation. The Compliance Unit held an Informal Opportunity to Show Compliance Meeting in 1996. Petco was found to be in noncompliance. Also, the MDNR's Law Division has pursued the case criminally without success. The GSD is continuing administrative enforcement action against Petco. All enforcement measures conducted to date have been unsuccessful towards initiating cleanup or plugging actions by the liable parties.

**RESPONSE ACCOMPLISHMENTS**

No state-funded response actions have been taken.

**FUTURE RESPONSE NEEDS****PROJECTED COST****INTERIM RESPONSE****\$1,500,000**

Funding is needed to plug 36 wells, remove storage tanks and other production equipment, and remediate the well sites of the oil field.

**FUNDING HISTORY**

No state funds have been appropriated for or expended at this site.

**FY00 PROPOSED ACTION**

One million three hundred eighty-one thousand dollars (\$1,381,000), along with savings from other sites in the amount of one hundred nineteen thousand dollars (\$119,000), are requested to conduct plugging and proper abandonment of 36 wells and associated tank batteries and remediate contaminated soil at all well and tank battery sites. FY99 funds may be utilized to accomplish this task. The GSD will also pursue cost recovery of the total amount expended.

\*Note\* As of October 1995, the cleanup program responsibilities were transferred from the Michigan Department of Natural Resources (MDNR) to the Michigan Department of Environmental Quality (MDEQ). As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) for water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ.

## SITE SUMMARY

### Site Name

West Urbandale Area Wells  
West Michigan/Prudence Streets  
Battle Creek, Michigan

County: Calhoun

MDEQ District: Plainwell/DWRPD

Site ID#: 130360

MAIN Project#: 455111

Site Score: 27

### LOCATION

This site is located adjacent to a former Quality Farm & Fleet store property. The impacted residential wells are on West Michigan Avenue and Prudence Street in Bedford Township.

### SITE HISTORY

Residential wells located adjacent to a Quality Farm & Fleet store, where a fire and explosion occurred in June 1998, have been found to contain solvents in concentrations exceeding GRCC's (tetrachloroethylene, 23.1-27.9 ppb) or below (trichloroethylene, 1.4 -1.8 ppb; cis-1,2-dichloroethylene 0.7 ppb). There was a dry cleaner/laundromat on the Quality Farm & Fleet property prior to its being occupied by their store and there is an existing dry cleaner/laundromat operating about one block from the site.

### SITE STATUS

The Barry-Eaton District Health Department is conducting an investigation and sampling numerous wells in the vicinity to determine the number of impacted wells. The source of the contamination is unknown at this time. Municipal water is available within a one-eighth mile of the site area.

### RESPONSE ACCOMPLISHMENTS

### EXPENDITURES

#### **BOTTLED WATER**

**\$500**

Bottled water is being provided to residences as an interim measure until a more permanent solution is in place.

### FUTURE RESPONSE NEEDS

### PROJECTED COST

#### **ALTERNATE WATER**

**\$84,000**

Funds are needed to provide permanent alternate water to the residence located at 2385 West Michigan Avenue. The aquifer at the site has been impacted and the only viable source of replacement water appears to be an extension of community water.

### **FUNDING HISTORY**

No state funds have been appropriated at this site. Bond contingency funds were used to provide bottled water as an interim response measure.

### **FY00 PROPOSED ACTION**

Eighty four thousand dollars (\$84,000) are requested for a necessary well replacement at the residence located at 2385 West Michigan Avenue. The aquifer at this site has been impacted and may be the only potable aquifer available. The extension of community water will likely be necessary to provide permanent alternate water at this site.

\*Note\* As of October 1995, the cleanup program responsibilities were transferred from the Michigan Department of Natural Resources (MDNR) to the Michigan Department of Environmental Quality (MDEQ). As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) for water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ.



## SITE SUMMARY

### Site Name

DME Company  
06342 Ferry Road  
Charlevoix, MI 49720

County: Charlevoix

MDEQ District: Cadillac/Gaylord

Site ID#: 150010

MAIN Project#: 454128

Site Score: 32

### LOCATION

DME Company is located in the city of Charlevoix in an area that has mixed commercial and residential land uses. Lake Charlevoix is 450 feet to the east of the site, with several seasonal homes located on the downgradient lakeshore. Lake Charlevoix is a prime recreational resource for the Charlevoix area.

### SITE HISTORY

DME began operating at its current location in 1955. The company has always produced ejector pins that are used in the plastics industry to eject plastic components from molds. As part of the manufacturing process, the pins are placed in degreasers containing tetrachloroethylene (PCE) to remove oil and other debris prior to being subjected to a steel hardening process. Historically, DME used a disposal pond located east of the main production building to dispose of spent solvents, used oils and coolants that were used in the grinding machines and degreaser units. The pond was used from 1955 through the 1970s. After the pond use was discontinued in the mid-1970s, an on site landfill located directly north of the plant was used to dispose of the same substances in a similar manner. The contents of the landfill were removed in the mid 1980s in response to a Michigan Department of Natural Resources (MDNR) request, however, groundwater contamination from various volatile organic chemicals has been confirmed on and off-site from the disposal practices in the landfill. On-site soil near the plant building and the landfill has also been confirmed as being contaminated with PCE. The soil and groundwater relative to the former disposal pond has not been investigated.

### SITE STATUS

DME has completed various phases of an investigation relative only to the landfill operations. On-site investigation activities have confirmed volatile organic compounds in soil and groundwater. An off-site investigation has confirmed groundwater contamination on residential properties above Drinking Water Criteria and Groundwater Volatilization to Indoor Air Inhalation Criteria. Downgradient private properties are served by municipal water and sewer systems. A Level of Effort (LOE) contractor has been assigned to conduct an indoor air evaluation in downgradient homes in response to levels that exceed Residential Groundwater Volatilization to Indoor Air Inhalation Criteria for vinyl chloride. An investigation will also be performed directly downgradient of the former disposal pond, and on private properties, to determine impacts to groundwater and Lake Charlevoix.

### ENFORCEMENT STATUS

DME has always maintained a manufacturing facility at this site. District staff is currently preparing a liability determination and is evaluating the company's compliance with their Section 14, Part 201 obligations.

### RESPONSE ACCOMPLISHMENTS

### EXPENDITURES

November 1998

**REMEDIAL INVESTIGATIONS****Private Funds-unknown  
\$20,000**

In the past, the liable party has performed a two-phase investigation relative to the former landfill operation. This included on-site soil and groundwater and off-site groundwater investigations. Further delineation of on and off-site conditions are necessary. The liable party has not investigated the disposal pond area.

**FUTURE RESPONSE NEEDS****PROJECTED COST****REMDIAL INVESTIGATION****\$300,000**

Additional funds are needed to investigate groundwater directly downgradient of the former disposal pond and to supplement hydrogeological information downgradient of the former landfill. This information is critical to evaluating exposure assumptions relating to a shallow aquifer and the impact to Lake Charlevoix in relation to levels that exceed Groundwater Surface Water Interface (GSI) criteria.

**FUNDING HISTORY**

Bond Contingency funds were authorized to conduct indoor air evaluations at nearby residences as well as to determine the extent of groundwater contamination. No state funds have been appropriated for this site.

**FY00 PROPOSED ACTION**

Three Hundred Thousand dollars (\$300,000) are requested to perform response actions necessary to address groundwater that is discharging into Lake Charlevoix well above GSI criteria for vinyl chloride. In addition, if current indoor air evaluation demonstrates actions are necessary, funds will be needed to plan and implement response actions in up to five homes.

\*Note\* As of October 1995, the cleanup program responsibilities were transferred from the Michigan Department of Natural Resources (MDNR) to the Michigan Department of Environmental Quality (MDEQ). As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) for water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ.

## SITE SUMMARY

### Site Name

Hooker Cleaners  
701 1/2 Bridge Street  
Charlevoix, Michigan

County: Charlevoix

MDEQ District: Cadillac/Gaylord

Site ID#: 150014

MAIN Project#: 451880

Site Score: 37

### LOCATION

Hooker Cleaners is located at 701 1/2 Bridge Street in the city of Charlevoix. The location is a mixture of commercial and residential. This area is a popular tourist location with very high usage of Round Lake, Lake Michigan, and the Pine River Channel during the summer and fall seasons.

### SITE HISTORY

Hooker Cleaners operated as a dry cleaning establishment for many years. As part of its operation, waste products such as tetrachloroethylene (PCE) sludges were allegedly released to the ground outside of the building. Also, an aboveground storage tank and related piping that held PCE was located outside and behind the building. In May 1995, an investigation performed by staff indicates PCE concentrations in the soils and groundwater exceed the standard to protect the downgradient surface waters of Round Lake. In April 1996, a recently discovered commercial supply well at a local business and directly downgradient of Hooker Cleaners was found contaminated with 620 ppb of PCE. This level of PCE represents an unacceptable exposure and acute health hazard to employees of this business as well as the public that patronizes this business on a daily basis.

### SITE STATUS

The site is currently owned by a non-labile party and is still operated as a dry cleaning establishment. PCE, in high concentrations, was detected in soil and in a downgradient groundwater supply well at a local business. In addition, a groundwater monitoring well located across the street and downgradient of this site indicates PCE in levels that threaten the aquatic resources of Round Lake.

### ENFORCEMENT STATUS

The current owner/operator is not considered liable under Part 201. Liability of the past owner/operator is currently being investigated for cost recovery purposes.

### RESPONSE ACCOMPLISHMENTS

### EXPENDITURES

#### REMEDIAL INVESTIGATION

**private funds -- \$5,000**

In December 1992 a limited site investigation was conducted by the owner/operator. This investigation confirmed the presence of PCE in the surface soil.

#### REMEDIAL INVESTIGATION (cont'd)

**staff and lab costs only -- \$7,900**

In May 1995, Michigan Department of Environmental Quality (MDEQ) staff profiled soils to the water table (50 feet) at six locations near the building. Samples were then analyzed on-site using the MDEQ Mobile Lab.

**INTERIM RESPONSE****\$11,452**

In September 1993, a state contractor developed a work plan outline and cost proposal for an interim response. Cost issues were never resolved with the contractor and staff chose not to proceed with the proposed work.

**FUTURE RESPONSE NEEDS****PROJECTED COST****INTERIM RESPONSE-Phase I****\$175,000**

Phase I of the interim response (IR) will involve further delineation of the source area soil and groundwater contamination and the completion of a soil vapor extraction (SVE) and groundwater sparge pilot test. Costs will be met through an internal transfer of funds.

**INTERIM RESPONSE-PHASE II****\$300,000**

Phase II will include the design, construction, operation and maintenance of a SVE and groundwater sparge system to treat source soil and groundwater that is protective of the surface water and groundwater resources in the area.

**FUNDING HISTORY**

General Fund Authorizations			Bond Fund Appropriations						
YEAR	ACTION	AMOUNT	YEAR	ACTION	AMOUNT	ACTION	AMOUNT	ACTION	AMOUNT
			1993	IR	\$0 <sup>t</sup>				
			1994	RI	\$0				
			1995	OM	\$200,000 <sup>t1</sup>				

**FY00 PROPOSED ACTION**

One hundred seventy thousand dollars (\$170,000) are requested to design, construct, operate and maintain soil vapor extraction (SVE) and groundwater sparge system to treat source soil and groundwater contamination.

\*Note\* As of October 1995, the cleanup responsibilities were transferred from the Michigan Department of Natural Resources (MDNR) to the Michigan Department of Environmental Quality (MDEQ). As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) for water supplies were transferred to the Drinking Water & Radiological Protection Division (DWRPD) of the MDEQ.

<sup>t</sup> \$188,000 were transferred to this activity from another Bond site.

<sup>t1</sup> \$200,000 were transferred from this activity to another Bond site.

## SITE SUMMARY

### Site Name

Lownsberry Salvage  
Osmun Road  
Afton, Michigan

County: Cheboygan

MDEQ District: Cadillac/Gaylord

Site ID#: 160056

MAIN Project#: 452247

Site Score: 42

### LOCATION

The site consists of a ten-acre parcel that is located just north of the Pigeon River Country State Forest on Osmun Road in Cheboygan County. The parcel is situated in a wetland which drains in to Milligan and Gakee Creeks. The wetlands located on the property have been filled to accommodate the salvage operation. Residences proximate to the site rely on groundwater for their drinking water.

### SITE HISTORY

The site is zoned forestry and agriculture but has operated as a salvage yard since 1976 under a special use permit. The salvage yard is the only known business to have operated at that location. Complaints were filed against the site for illegal burning, improper disposal of solid waste, and releases of hazardous substances to the soil and groundwater.

In 1991, Michigan Department of Natural Resources (MDNR) staff responded to a complaint from the District Health Department #4 concerning possible well water contamination at a nearby residence. Staff visited the site and observed numerous releases as evidenced by stained soil, open containers, and sloppy disposal practices. Mr. Lownsberry was requested, via certified mail, to take measures necessary to remediate the site. There was no response.

Samples were collected in the spring of 1992 and identified the facility as a site of contamination. Samples indicated levels of lead above the direct contact hazard, as well as other heavy metals and high levels of polynuclear aromatic hydrocarbons (PNAs) in soil on-site. The owner/operator was requested to remediate the site in 1992 and again in 1995, with no response.

Staff resampled the site in 1996 and identified levels of contaminants exceeding the direct contact hazard for soil, general residence criteria for groundwater and the groundwater and surface water interface (GSI) criteria for surface water. Lead was identified in soil at 1,010 ppb, in groundwater at 9,500 ppb, and in surface water at 1,300 ppb. Other contaminants identified above standards include arsenic, mercury, barium, cadmium, chromium, copper, zinc, *bis* (2-ethylhexyl) phthalate, benzene, toluene, ethylbenzene, xylene, isopropylbenzene, *n*-propylbenzene, 1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, naphthalene, 2-methylnaphthalene, phenanthrene, chrysene and benzo(a)anthracene. The Michigan Department of Environmental Quality (MDEQ) again requested the owner/operator to take appropriate measures to remediate the site in 1996 and 1997, with no response.

Soil and groundwater samples collected from borings on-site (groundwater is present at approximately four foot depth) reveal concentrations of contaminants that pose an acute public health threat to local drinking water supplies as well as an acute environmental threat to fish and other aquatic life in Milligan and Gakee Creeks and the surrounding wetlands.

**SITE STATUS**

The site is privately owned. The owner/operator of the site has not responded to requests to initiate a site cleanup. The salvage yard continues to operate with suspected ongoing releases. The site is unfenced and open to the public.

**ENFORCEMENT STATUS**

The owner/operator has not responded to requests to remediate the site.

**RESPONSE ACCOMPLISHMENTS**

No state-funded response actions have been taken at this site.

**FUTURE RESPONSE NEEDS****ESTIMATED COST****INTERIM RESPONSE****\$300,000**

Interim response activities are proposed to remove the physical and chemical hazards posed by the salvage debris, open containers, and contaminated soil on-site. A minimal number of monitoring wells will be installed at the site to evaluate groundwater emanating from the property. The proposed actions will eliminate immediate direct contact hazards and prevent further contamination of groundwater.

**FUNDING HISTORY**

No state funds have been appropriated or expended at this site.

**FY00 PROPOSED ACTION**

Three hundred thousand dollars (\$300,000) are requested to implement response actions to remove the physical and chemical hazards posed by the salvage debris, open containers and contaminated soil on-site. A minimal number of monitoring wells will be installed at the site to evaluate groundwater emanating from the property.

\*Note\* As of October 1995, the cleanup program responsibilities were transferred from the Michigan Department of Natural Resources to the Michigan Department of Environmental Quality (MDEQ). As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ.

## SITE SUMMARY

### Site Name

City of Clare Sanitary Landfill  
Old US 27  
Hatton Township, Michigan

County: Clare

MDEQ District: Saginaw Bay/DWRPD

Site ID#: 180007

MAIN Project #: 450965

Site Score: 38

### LOCATION

The City of Clare (City) Sanitary Landfill site is located on the west side of Old US 27 and Browns Road in rural Clare County, approximately 5 miles north of Clare. The landfill is located on an approximately 79-acre parcel of land containing a closed 17-acre landfill and the 2 ½-acre former fill area. The site is located approximately one mile south of the Middle Branch Tobacco River in the Saginaw Bay Watershed.

### SITE HISTORY

The City currently owns the Landfill site. The City bought the site in 1974 from Mr. William Bauer. Mr. Bauer purchased the site in 1970 from the Sieders family. The Sieders family operated Cement Products, a cement block business, on this site from the late 1950s until 1970. In 1971, Mr. Bauer began operating Bauer's Sanitary Landfill on the property. Mr. Bauer used the existing gravel pits for his landfiling operation. Both the 17-acre and the 2 ½ acre parcels were used for landfiling activity. Bauer's Sanitary Landfill was licensed under Act 87, 1965 PA 87, as amended by the State of Michigan for disposal of both municipal and industrial wastes. In addition to the landfill operation, Mr. Bauer also owned and operated a snowmobile racetrack in the southeastern portion of the site.

The City assumed ownership and management of the landfiling operations in 1974 and continued accepting municipal and industrial wastes. The City annually renewed its operating license from 1974 to 1979 under Act 87, 1965 PA 87, as amended. The City's last operating license expired on September 1, 1979, and was not renewed by the state based on the City's failure to meet the stricter guidelines imposed by Public Act 641. Among these failures was the City's inability to conduct certain hydrogeologic investigations requiring installation and periodic sampling of monitoring wells. The City claimed it was unable to pay for the required hydrogeologic work and continued to operate the landfill illegally until 1987.

The City was notified by letters, dated October 29 and December 22, 1981, that it failed to meet the minimum requirements for landfill licensure under Public Act 641. In October 1985, the Michigan Department of Natural Resources (MDNR), with the consent of the City, drilled and installed five monitoring wells along the north and northwestern edges of the landfill. The wells were installed to determine the impact of the sites unlicensed landfiling operations on the area groundwater. The analytical results from the monitoring wells indicated concentrations of lead (5 ppb), chromium (7 ppb) and 1,1 dichloroethane (1.1 ppb). Leachate seeps sampled at the same time indicated the presence of polychlorinated biphenyls (PCBs). The concentrations of contaminants present in the 1985 sampling were above the cleanup criteria in place at the time.

In June 1986, the Michigan Department of Public Health (MDPH) sampled several residential wells in the immediate vicinity of the landfill. The drinking water at two homes adjacent to the site was found to be contaminated with vinyl chloride (2 ppb), chloroform (8 ppb), cis 1,2-dichloroethylene (26 ppb), and 1,1,1 trichloroethane (1 ppb). These concentrations were above the cleanup criteria before Part 201. The MDPH began providing bottled water to these residents in August 1986. To date, five residential drinking water wells have been replaced.



An Order of Cease and Desist was issued to the City by the MDNR on August 7, 1986, directing the City to immediately cease operations at the landfill and to prepare a groundwater cleanup and site closure plan.

However on September 11, 1986, a MDNR official observed continued dumping activity at the site in direct violation of the Order to Cease and Desist.

On September 18, 1986, as part of the ongoing legal actions, the MDNR was ordered by the presiding judge to act as a participating member in the planned closure and capping of the landfill. Six additional monitoring wells were installed by the MDNR to further characterize existing geologic conditions at the site. The analytical results from these wells indicated concentrations of toluene (22 ppb), *cis* 1, 2 dichloroethane (7.5 ppb), lead (70 ppb), and zinc (2,100 ppb).

On December 22, 1986, the presiding Circuit Court judge ordered a partial consent agreement ordering the City to close and cease operations of its unlicensed landfill. The agreement also required the City to immediately submit, to the MDNR, a plan for a hydrogeologic investigation identifying the extent of contamination resulting from past and present landfill operations. By January 1987, the City had ceased landfill operations and had submitted a work plan to the MDNR. Four additional monitoring wells were installed. As of 1987, the City had made no attempt to address the extent of contamination at the site, as required by the court-ordered consent agreement.

On July 13, 1988, an Order between the Plaintiffs Hatton Township, the State of Michigan, and the MDNR requesting injunctive relief against Defendant, the City, was signed. The Order requested that the landfill be capped for the purpose of closure. The City, under MDNR supervision, completed capping and seeding of the landfill in September of 1989. Funding for the remedial activity was provided to the City through a State of Michigan - Clean Michigan grant. The Order also required the City to conduct various work including, but not limited to, submitting a plan for additional hydrogeologic investigation to determine the vertical and horizontal extent and chemical characteristics of any plume of contamination which might be emanating from the landfill and promptly conduct such investigation and submit the results. To date, the requirement to submit the work plan and conduct the required work has not been completed. The Order also required the submittal of a remedial action plan to address the restoration of groundwater to background levels. As of yet, a remedial action plan has not been submitted to this office.

Ecology and Environmental, Inc. Field Investigation Team (FIT) was tasked by the United States Environmental Protection Agency (USEPA) to conduct a screening site inspection (SSI) at the landfill. The SSI was conducted on April 18 and 19, 1990. The SSI detected concentrations of aluminum, chromium, lead, and nickel in the on-site wells. These concentrations were above the levels in the upgradient well.

Semi-annual sampling results from groundwater samples, taken by the City's consultant from the monitor wells on-site and downgradient of the landfill, have indicated concentrations of volatile organic compounds (VOCs) above the health-based drinking water value for vinyl chloride, trichloroethylene, *cis* 1,2-dichloroethylene, lead, and zinc. The July 1996 sampling indicated concentrations of vinyl chloride in monitor well #15 at 63 ppb. Monitor well #15 is the most downgradient monitor well and is located off-site on the east side of Old US 27. The September 23, 1998, sampling in this well did not indicate any concentrations of vinyl chloride, yet trichloroethene at 860 ppb was detected. The trichloroethene detected is above the Part 201 cleanup criteria.



**SITE STATUS**

Contaminated groundwater above the cleanup criteria continues to emanate from the landfill to off-site properties. On October 10, 1996, a Section 14 enforcement letter was sent to the City. The City has never officially responded. The Michigan Department of Environmental Quality (MDEQ), Environmental Response Division (ERD) district staff requested to split-sample the September 1998 groundwater sampling event, but the City did not contact the office to arrange the sampling time.

**ENFORCEMENT STATUS**

MDEQ staff is consulting with the assigned Assistant Attorney General to discuss enforcement options.

**RESPONSE ACCOMPLISHMENTS****EXPENDITURES****ALTERNATE WATER****\$28,591**

Residential contaminated wells were replaced in 1995. General funds were used for the well replacements.

**\$4,236**

These funds are being used for monitoring of residential homes downgradient from the landfill for the past three years.

**BOTTLED WATER****\$2,394**

In 1992, bottled water was issued as an interim measure until a more permanent replacement is in place.

**REMEDIAL INVESTIGATION****unknown - federal funds**

The USEPA conducted a site inspection in 1990. Numerous samples were taken of the soil, groundwater, surface water, and sediments.

**FUTURE RESPONSE NEEDS****PROJECTED COST****REMEDIAL INVESTIGATION/FEASIBILITY STUDY****\$500,000**

A remedial investigation needs to be conducted to determine the extent of soil, groundwater, and surface water contamination at the site. A complete hydrogeological investigation is needed at the site to determine the vertical and horizontal extent of the groundwater contamination.

**INTERIM RESPONSE****\$1,000,000**

Interim response actions will be directed at source control, including the installation of sediment traps and a leachate interception, collection and treatment system.

**FUNDING HISTORY**

General Fund Authorizations			Bond Fund Appropriations						
YEAR	ACTION	AMOUNT	YEAR	ACTION	AMOUNT	ACTION	AMOUNT	ACTION	AMOUNT
1987	AW	\$38,000	1995	AW	\$1,000 <sup>t</sup>				
1990	AW	\$14,000							

**FY00 PROPOSED ACTION**

Seven hundred eighty six thousand six hundred dollars (\$786,600) of \$1,500,000 are requested to conduct a remedial investigation/feasibility study, conduct interim response actions as necessary, and design and operate a remedial action for the site. The remaining \$713,400 will be made available through a transfer.

Note \* As of October 1995, the cleanup program responsibilities were transferred from the Michigan Department of Natural Resources (MDNR) to the new Michigan Department of Environmental Quality (MDEQ). As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) for water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ.

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<sup>t</sup> \$1,356 were transferred to the site from another Bond activity.

## SITE SUMMARY

### Site Name

Bear Archery (former)  
5671 M-72 West  
Grayling, Michigan

County: Crawford

MDEQ District: Cadillac/Grayling

Site ID#: 200073

MAIN Project#: 455141

Site Score: 38

### LOCATION

The former Bear Archery factory is located on M-72 near the west city limits of Grayling. It is located on the stump pond of the mainstream of the AuSable River. Much of the original factory building has been demolished. Classic Container owns the property and is operating a business out of a portion of the remaining buildings. The area is served by municipal water.

### SITE HISTORY

Bear Archery manufactured hunting bows in Grayling from the 1950s to the early 1980s. Factory wastes were said to include benzene, polynuclear aromatic hydrocarbons, acetone, thinners, resins, fiberglass and paints. Interviews with former employees and waste hauling contractors indicate that wastes were disposed of at the Otsego County Landfill and the Grayling City Dump. Also, it was reported that drums of wastes were dumped on Bear Archery property adjacent to the stump pond about one-quarter mile southwest of the factory. In addition to the factory property, it was reported that factory wastes were dumped in a "landfill" at the northeast intersection of North Down River and Stephan Bridge roads and on west M-72 near the AuSable River. In addition, wastes were allegedly dumped on west M-72 near Lake Margrethe, on east M-72 several miles from town and behind the Jack Millikin, Inc. building in Grayling.

Considerable time was spent interviewing former employees by the Law Enforcement Division; however, limited site investigation and sampling by Department of Environmental Quality (DEQ) staff did not confirm the reports.

### SITE STATUS

Environmental Response Division's (ERD) Superfund Pre-Remedial Unit conducted a limited site investigation in November 1998. Sampling was performed behind the old factory building, on west M-72 at the AuSable River, and at the North Down River Road location. Numerous soil, groundwater, sediment and surface water samples were obtained and analyzed for various parameters. To date, only some of the soil volatile organic compound (VOC) analytical results have been received. Benzene was detected in the soil at 240 parts per billion (ppb), which is 2.4 times the drinking water protection criteria. Toluene was detected at 49,000 ppb, which is three times the drinking water protection criteria. Xylenes were detected at 108,000 ppb, which are nineteen times the drinking water protection criteria.

November 1998

**ENFORCEMENT STATUS**

A liability determination will be conducted and potentially liable parties (PLPs) under Part 201 will be notified of their responsibility to take response actions.

**RESPONSE ACCOMPLISHMENTS****EXPENDITURES****REMEDIAL INVESTIGATION****unknown**

In November 1998 the Superfund Pre-Remedial Unit installed numerous geoprobe soil borings and temporary monitor wells. Samples of the soil, groundwater, sediment, and surface water were collected for analysis.

**FUTURE RESPONSE NEEDS****PROJECTED COST****REMEDIAL INVESTIGATION****\$250,000**

Remedial investigation activities will include additional sampling of the soil, groundwater, sediment, and surface water. Installation of monitor wells, establishment of groundwater flow direction and evaluation of potential receptors will be conducted to determine if remedial actions are needed.

**FUNDING HISTORY**

No state funds have been appropriated for this site.

**FY00 PROPOSED ACTION**

Two hundred fifty thousand dollars (\$250,000) are requested to conduct soil, groundwater, sediment, and surface water sampling which may include installation of monitoring wells and determine potential receptors in order to determine response actions needed.

## SITE SUMMARY

### Site Name

Delta Chemical & Iron Co.  
P Road  
Escanaba, Michigan

County: Delta

MDEQ District: Marquette

Site ID#: 210087

MAIN Project#: 454945

Site Score: 26

### LOCATION

The facility is located along the Lake Michigan shoreline, approximately  $\frac{1}{4}$  mile north of the Escanaba River, on the east side of P Road in Wells Township. Much of the northern portion of the facility is now owned by the U. S. Air Force (USAF) and is the site of the United States Department of Defense Fuel Support Point (DFSP) at 6734 P Road. The historic facility extends an unknown distance towards the Escanaba River to the south and into Little Bay de Noc (Lake Michigan) to the east. The exact area affected is unknown, but is estimated to be at least 20 acres based on wastes observed at the surface.

### SITE HISTORY

In approximately 1902, the Mashek Chemical & Iron Company was formed and began operations partially on, but primarily south of a former switching yard built in 1860 by the Chicago & Northwestern Railroad. Mashek produced charcoal, wood alcohol and "Gray Ascetate [sic] of Lime" and is also believed to have processed Hemlock bark for tannic acid production for use in animal hide tanning. By 1922, after various mergers and acquisitions including the Stephenson Charcoal & Iron Co., the Stephenson Charcoal & Lime Co., the M. J. Corbett Co. and the Delta Chemical Co., the facility eventually became the Delta Chemical and Iron Company (DCIC) which produced charcoal pig iron, acetic acid, methanol and other wood alcohols, ethyl acetone, formaldehyde, creosote, tars and oils, etc. until the 1940s. Hardwoods were heated in sealed retorts to produce charcoal and the gases were collected, distilled and refined to produce the chemical products. Waste tars and other liquids reportedly were piped directly to the bay and solid tars, charcoal scraps, slag and miscellaneous wastes were dumped along the shoreline and elsewhere on the property. DCIC's annual production was reported to be 24,000 tons of pig iron, 2,400,000 pounds each of acetic acid and formaldehyde and 360,000 gallons of methanol.

No information on the facility has been found for the time period from the 1940s to 1957. From 1957 to 1959 the USAF constructed the Defense Fuel Support Point (DFSP) on a portion of the DCIC property, while the rest of the property remained vacant. During the construction, a slurry wall was installed in the ground around the DFSP tanks. The contractor reportedly encountered two wooden sub-surface conduits full of wood tars during the trenching for the slurry wall. The disposition of these tars is unknown.

In 1997, the USAF attempted to trace the sub-surface tar conduits through the DFSP property. The conduits were found to lead directly from the former location of the retorts and distillation buildings to a pool of exposed tars (approximately  $\frac{1}{4}$  acre in size) immediately south of the DFSP property. Within 100 feet to the east of this "tar pond", dried slabs of tar litter the Lake Michigan shoreline and fresh tar has been observed emanating from the ground onto the shore and under the water.

The USAF is investigating environmental conditions at the DFSP property. Free-phase jet fuel (JP-4) is present in the soils (which are primarily fill - cinders, slag, brick, etc.) over much of the DFSP property and on the groundwater in a more limited area. Jet fuel constituents dissolved in

the groundwater are migrating off the DFSP property, through the adjacent site and are discharging into Lake Michigan. A proposal from the USAF is expected for the remediation of all contamination on the DFSP property, including fuel-related contaminants that migrated from the property.

No specific chemical data is yet available on these tars. However, data exists for tars from other sites in the Marquette District where similar manufacturing operations occurred. Analyses of tar samples from these other sites have routinely shown benzene, ethylbenzene, toluene, xylenes, tetrachloroethylene, naphthalene, 2-methyl naphthalene, phenol, 2-methyl phenol, 4-methyl phenol, 2,4-dimethyl phenol, dibenzofuran, fluorene, phenanthrene, pyrene, arsenic, chromium, copper, lead, mercury, nickel and zinc to be present. Most of these compounds have also been found in the soils and groundwater at these other sites. None of the tar samples from the other sites were found to contain any compounds at concentrations high enough to make them regulated hazardous wastes, however, the concentrations of some of the compounds are above the "Generic Residential Direct Contact" criteria established under Part 201, Environmental Remediation, of Act 451. These tars typically have a strong odor that can permeate clothing and cling to the skin after a few hours of exposure. A dry throat is also a commonly reported symptom of exposure.

#### **SITE STATUS**

The Bichler Gravel Company currently owns the portion of this historic facility located south of the DFSP. That property is currently vacant although several massive foundations of concrete, brick or hewn limestone exist on the property. The land is apparently comprised of historic fill such as slag, smelted iron wastes, broken brick & concrete and charcoal which can be seen throughout the site among the vegetative overgrowth. A "tar pond" is present on the property and many scattered occurrences of tar have been observed between this pond and the shoreline. As of December 8, 1998, a contract order has been requested to perform preliminary site investigations sufficient to develop bid specifications to procure a cleanup contractor to perform an interim response removal of tar from the bay and the tar pit.

#### **ENFORCEMENT STATUS**

A records search by the Michigan Department of Natural Resources (MDNR), now the Michigan Department of Environmental Quality (MDEQ), has not identified any viable responsible parties connected to the former chemical production facilities. No investigation of the former chemical production facility has been conducted off the DFSP property, other than some limited sampling of the tar pond by the USAF in 1997.

#### **RESPONSE ACCOMPLISHMENTS**

#### **EXPENDITURES**

##### **REMEDIAL INVESTIGATION/FEASIBILITY STUDY**

**\$180,000**

A feasibility work study is needed to determine the full extent and nature of the chemical deposits at this facility. Funds were authorized in the fall 1998. Work is nearing completion.

**FUTURE RESPONSE NEEDS****PROJECTED COST****INTERIM RESPONSE****\$500,000**

A limited investigation will be conducted sufficient to prepare specifications and solicit bids for the removal or control of tars which may erode from the shoreline of this property into the near-shore waters of Little Bay de Noc. Measures will be taken to prevent human contact with near-surface tar deposits on the property, if necessary. Upon completion of the interim response activities, a remedial investigation and feasibility study will be conducted to determine the full extent and nature of the contamination remaining at the facility. Funds have been appropriated and the interim response design is underway.

**REMEDIAL INVESTIGATION/FEASIBILITY STUDY****\$20,000**

A feasibility work study is needed to determine the full extent and nature of the chemical deposits at this facility. Funds are appropriated for this activity.

**REMEDIAL DESIGN****\$50,000**

A design will be developed based on the information collected with the investigation information.

**REMEDIAL ACTION****\$200,000**

Based on the results of the investigation and interim response, a final remedial action maybe needed to be designed and implemented.

**SPECIAL CONSIDERATIONS**

Uncontrolled tars deposits exposed at the ground surface, which likely contain chemical substances above the "Generic Residential Direct Contact" criteria represent an acute public health and environmental problem.

**FUNDING HISTORY**

General Fund Authorizations			Bond Fund Appropriations						
YEAR	ACTION	AMOUNT	YEAR	ACTION	AMOUNT	ACTION	AMOUNT	ACTION	AMOUNT
			1999	IR	\$500,000	RI	\$200,000		

**FY00 PROPOSED ACTION**

Two hundred and fifty thousand dollars (\$250,000) are requested to remove or control the tars, conduct measures to prevent human contact with near-surface tar deposits on the property, and to determine the full extent and nature of the chemical deposits in order to design an effective long term remedy.

Note\* As of October 1995, the cleanup program responsibilities were transferred from the Michigan Department of Natural Resources (MDNR) to the Michigan Department of Environmental Quality (MDEQ). As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) for water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ.

## SITE SUMMARY

### Site Name

Parsons Chemical Works, Incorporated  
3562 West Jefferson Street  
Grand Ledge, Michigan

County: Eaton

MDEQ District: Shiawassee/Superfund

Site ID#: 230010

MAIN Project#: 450113

Site Score: 40

### LOCATION

The Parsons facility is located in Oneida Township, west of Grand Ledge, in northeastern Eaton County. The facility is bounded by West Jefferson Street to the north, Oneida Street to the east, Lawson Road to the west and the Millbrook Printing property to the south. ETM Enterprises currently operates a manufacturing facility at this location. The study area includes nearby Fitzgerald Park, an adjacent unnamed stream and a portion of the Grand River downstream from the dam in Grand Ledge's Fitzgerald Park.

### SITE HISTORY

A state lead, federally-funded response action of a remedial investigation/feasibility study (RI/FS) was completed in January 1996 at the Parsons Chemical Works, Incorporated Superfund site (Parsons) to assess the nature and extent of environmental contamination that resulted from past practices at the now defunct Parsons plant. The results of the RI/FS revealed that one pesticide, dieldrin, was present in the groundwater beneath the facility as well as elevated concentrations of three metals, manganese, arsenic and lead. The Baseline Risk Assessment concluded that if groundwater, containing manganese at concentrations detected in some RI monitoring wells, is consumed, it poses unacceptable noncarcinogenic human health risks. Five adjacent private water supply wells were sampled during the RI. Manganese was found at concentrations above the generic aesthetic residential drinking water standard pursuant to Part 201 of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Part 201), in two of the five residential wells sampled. No chemicals were detected above applicable generic health-based drinking water standards in any of the five residential wells sampled. The three metals and dieldrin were not detected in filtered groundwater samples deeper than 20 feet into the bedrock aquifer. This aquifer is the water source of adjacent private water supply wells. However, the hydraulically downgradient private wells are all believed to be installed at least 100 feet into the aquifer.

Grand Ledge municipal water is only available to residences and businesses with frontage on West Jefferson Street as far west as Lawson Road, but not further north or south of the street. The western most municipal supply that extends to residences north and south of Jefferson stops at Kennedy Place (a city street).

The threat posed by the site is the potential for the chemicals detected at elevated concentrations in the top 20 feet of the bedrock aquifer to migrate downward and laterally, eventually impacting private wells.

Soil on the Parsons plant site does not pose unacceptable health risks for current or future land use. However, one soil sample collected from a boring drilled for one of the monitoring wells, on the north side of Jefferson Street, contained an arsenic concentration of 408 ppm. This concentration poses an unacceptable degree of risk for cancer and non-carcinogenic health effects from both direct contact and ingestion pursuant to Part 201. The applicable Part 201 standard for direct contact with arsenic is 5.5 ppm. The source of the arsenic is believed to be the former Parsons plant.

November 1998



The Record of Decision (ROD) was signed by the United States Environmental Protection Agency (USEPA) in September 1997. The selected remedial alternative for groundwater is long term monitoring of all of the approximately 50 private wells in the vicinity of the former Parsons plant. Trend analysis will be performed on the analytical results for four chemicals of concern to detect any decrease in drinking water quality. If unacceptable groundwater quality degradation is observed, a contingency plan will be invoked. In addition the ROD stipulates that any confirmed detection of dieldrin or a confirmed detection of arsenic at 50% of the applicable health based drinking water standard in a private water supply well will trigger implementation of the contingency plan. The contingency plan consists of extending the Grand Ledge municipal water supply system to this area to provide municipal water to all businesses and residences. If necessary, an interim water supply, such as bottled water, will be provided until the municipal water system construction is complete.

The Superfund ROD did not address the soil contamination. Rather, the USEPA plans to address contaminated soil identified in the RI/FS when they conduct a second Non Time-Critical Removal (NTCR) at the site to address the contaminated soil remaining on site after the first non time-critical removal. The first NTCR addressed 3,000 cubic yards of soil using In-Situ Vitrification (ISV) technology. The volume of soil was contractually limited to 3,000 cubic yards during the ISV work. The USEPA estimated that between 2,000 and 3,000 cubic yards of similarly contaminated soil remained after the first NTCR. The reason the soil remained on site is because the ISV contract limited the volume of soil to be treated to 3,000 cubic yards and additional areas of contamination were discovered during the first NTCR.

The Michigan Department of Environmental Quality (MDEQ) sampled all of the area private water supply wells, where access was granted, in December 1997. The water samples were analyzed at the MDEQ laboratory for pesticides and metals. This sampling event was conducted for two reasons. First, the data was needed to provide a pre-design baseline for developing the long-term monitoring program. Second, it had been nearly four years since private water supply wells had been sampled during the RI/FS; and then, the 1993 sampling was limited to five private wells. The MDEQ had heard from several citizens concerned about the quality of their water supply.

No pesticides were detected in any of the water samples. Lead and arsenic concentrations were less than the Part 201 drinking water criteria. Water from 17 of the wells sampled contained concentrations of manganese in excess of the Part 201 aesthetic criterion. The aesthetic criterion for manganese is 50 ppb while the health-based drinking water criterion is 760 ppb. However, Part 201 stipulates that where an aesthetic criterion which is less than the health-based value exists, the aesthetic concentration applies. The manganese concentrations in those wells that exceeded 50 ppb ranged from 54 ppb to 458 ppb. The regional background concentration of manganese in groundwater was not determined during the RI. In order to ascertain whether or not the manganese found in some of the wells is attributable to the Parsons site, a background investigation will be performed during the remedial design (RD) phase. It is anticipated that the investigation will consist of drilling three borings to a depth equal to the deepest residential well in the area. The aquifer will be vertically sampled at each location at frequent intervals. These borings will be located in an area considered hydraulically upgradient from the former Parsons' operations. From this data, a regional concentration for manganese in groundwater will be established. If it is determined that the manganese in water supply wells is attributable to the Parsons site and therefore contamination emanating from Parsons is degrading the quality of the water supply in the area, the ROD stipulates that the Grand Ledge Municipal Water Supply System be extended and the homes and businesses in the area connected to the system.

**SITE STATUS**

Two separate, but related actions are currently underway at the Parsons site. Design of the long-term monitoring remedy began in 1998. It has been determined that it will be necessary to conduct an investigation to establish an area-wide background concentration for manganese in groundwater. This task will be incorporated into the RD. Snell Environmental Group (SEG) has been retained to develop planning documents for the RD. The RD should be completed during 1999.

The second action taking place is the USEPA-lead NTCR of the remaining contaminated soil associated with the Parsons site. The USEPA has been at the site several times during 1998 to conduct additional confirmatory soil sampling with their goal being to estimate the volume of soil to be removed. The analytical information is also necessary to determine the soil disposal options. The USEPA began the soil removal in December 1998. The MDEQ will provide support services during the removal. In addition, the MDEQ plans to conduct soil sampling during the removal action for the purpose of determining adequacy of soil remediation pursuant to Part 201.

Beginning in 2000, State funding is anticipated to be 100% of the Operation and Maintenance of the monitoring program.

**ENFORCEMENT STATUS**

MDEQ has informed the current owner of the facility, ETM Enterprises, that they will not be held responsible for any contamination that resulted from Parsons Chemical Works, Incorporated operations. The USEPA has preliminarily determined that the former owner is not financially viable.

**RESPONSE ACCOMPLISHMENTS****EXPENDITURES****REMEDIAL ACTION****\$100,000**

A NTCR project, funded primarily by USEPA, addressed 3,000 cubic yards of contaminated soil between 1990 and 1994. The (MDEQ) expended approximately \$100,000 over the course of 6 years on this project. Bond funds were not used for this activity.

As described above, the second USEPA-funded NTCR to address contaminated soil began in late 1998. The 1995 appropriation is expected to be utilized for the soil sampling to determine adequacy of soil remediation. There will also be non-Bond expenses for staff time.

**FUTURE RESPONSE NEEDS****PROJECTED COST****SUPERFUND MATCH PLUS OPERATION AND MAINTENANCE (OM) \$368,000**

A total of \$368,000 to cover state 10% match costs under CERCLA, Section 104(c)(3) followed by 14 years of OM is being included in the fiscal year 2000 Bond request.

**FUNDING HISTORY**

General Fund Authorizations			Bond Fund Appropriations					
YEAR	ACTION	AMOUNT	YEAR	ACTION	AMOUNT	YEAR	ACTION	AMOUNT
1985	IR	\$5,400	1994	IR	\$0			
1990	IR	\$12,300	1995	IR	\$30,000			
			1997	RA	\$0			

**FY00 PROPOSED ACTION**

Three hundred and sixty eight thousand dollars (\$368,000) are being requested to cover the States 10% share to conduct the monitoring and to continue operation and maintenance of the treatment system.

\*Note\* As of October 1995, the cleanup program responsibilities were transferred from the Michigan Department of Natural Resources (MDNR) to the new Michigan Department of Environmental Quality (MDEQ). As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) for water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ.

## SITE SUMMARY

### Site Name

916 S. Main Street  
Eaton Rapids, Michigan

County: Eaton

MDEQ District: Shiawassee

Site ID#: 230049

MAIN Project#: 454250

Site Score: 27

### LOCATION

The site is located in downtown Eaton Rapids and is about a third of a mile south of the Grand River. The area is a mix of commercial properties and residences.

### SITE HISTORY

916 South Main Street is a former dry cleaners. Hungry Howie's, a pizza franchise, presently occupies the property. On October 17, 1994, an estimated 60 gallons of perchloroethylene (PCE) contaminated liquid was pumped out of Hungry Howie's sump and flowed onto a dirt parking lot. Hungry Howie's removed approximately 9 drums of recovered liquid waste and 45 cubic yards of soil. PCE in the soil that was removed was found to be 5,100 ppb. PCE under the building was found to be 5,300 ppb. The groundwater protection criterion for PCE in soils is 100 ppb. Eaton Rapids is supplied by municipal wells on the north side of the Grand River.

Post-remedial closure sampling by a Hungry Howie's consultant found that the levels of PCE increased with depth in the soil indicating that old releases had impacted the sandy soils. In May 1997, the District closed out the sump spill that Hungry Howie's cleaned up. The property remains at risk due to historical releases under the building and in the parking lot that have not been delineated by any party. Hungry Howie's leases the property and is not liable for the historical PCE releases.

### SITE STATUS

No facility investigation has occurred since the remediation of the surface spill. The likelihood of groundwater contamination is high given the sandy soils in the area and the lapse (20 years) of time since dry cleaners operated. The Grand River is a likely receptor to a potential contaminated groundwater plume. Presently, it is not known if residential wells are threatened.

### ENFORCEMENT STATUS

The former business was called C and D Dry Cleaners. A former owner-operator, who responded to an Information Request letter, is 83 years old, lives in Florida and sold his business interest in 1977. He is not likely to be financially viable if found to be a liable party. The present landowner, ER Holding company, did not perform a baseline environmental assessment (BEA). Liability determination is ongoing.

**RESPONSE ACCOMPLISHMENTS****EXPENDITURES****Interim Response****Private Funds - unknown**

Private parties responded to the 60-gallon PCE spill by excavation and disposal of the impacted soils in October 1994. A limited investigation followed that determined the property soils had been impacted by historical releases.

**FUTURE RESPONSE NEEDS****PROJECTED COST****REMEDIAL INVESTIGATION****\$100,000**

A remedial investigation (RI) is needed to determine the extent of soil and groundwater contamination on the property and/or migrating off the property and determine the source removal and treatment options if receptors are found to be at risk.

**SPECIAL CONSIDERATIONS:**

The primary objective of the requested remedial investigation is to determine the magnitude of the problem from historical PCE releases. The RI will be limited scope if releases are found to be incidental. The Grand River is less than one-half a mile from the facility. No groundwater investigation has been completed and the threat to drinking water supplies is unknown.

**FUNDING HISTORY**

No state funds have been appropriated or expended at this site.

**FY00 PROPOSED ACTION:**

One hundred thousand dollars (\$100,000) are requested to conduct a RI to determine if historical releases significantly impacted site soils and groundwater. If soils and groundwater are significantly impacted then evaluation will be done to determine if further action is necessary. The expected scope of work is to include site history, source evaluation, soil borings, groundwater samples and installation of monitoring wells.

\*Note\* As of October 1995, the cleanup program responsibilities were transferred from the Michigan Department of Natural Resources (MDNR) to the Michigan Department of Environmental Quality (MDEQ). As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) for water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ.

## SITE SUMMARY

### Site Name

City of Olivet Well No. 3

Olivet, Michigan

County: Eaton

MDEQ District: Shiawassee/DWRPD

Site ID#: 230184

MAIN Project#: 455228

Site Score: 28

### LOCATION

City Well No. 3 is located in the City of Olivet, east of Church Street, south of Cottage Street and north of Yale Street. This is a residential area adjacent to Olivet College.

### SITE HISTORY

The well was found to contain 6.0 ppb methyl tert-butyl ether (MTBE) during routine chemical monitoring in September 1994. A resample, collected in January 1995, confirmed the presence of MTBE at 5.0 ppb. Since that time, the well has been placed on standby status and has not pumped to the distribution system. The well is sampled quarterly for volatile organic compounds (VOCs) with MTBE levels in the 2-6 ppb range. Also, starting in June of 1996, trace levels of 1,2-dichloroethane have been detected. Storage Tank Division (STD) staff has concluded that if the well were pumped for any significant amount of time, it would exceed an MCL for regulated contaminants.

The probable identified cause of the contamination is a leaking underground storage tank (LUST) at the Olivet College Physical Plant. Analytical results from several monitoring wells near the Physical Plant showed elevated levels of benzene, ethyl-benzene, xylenes and MTBE.

### SITE STATUS

The well is on standby status and is sampled quarterly for VOC's. It is pumped to waste for approximately 5 minutes each month so a coliform bacteria sample can be collected. The city is pursuing other well sites to replace this well. To date, there has been no remedial action or clean up activities on the site.

### FUTURE RESPONSE NEEDS

### PROJECTED COST

#### ALTERNATE WATER

**\$150,000**

Funds are needed to match the City of Olivet's funds of \$300,000 to construct a new well and connect it to the existing municipal water system.

### FUNDING HISTORY

No state funds have been appropriated or expended at this site.

### FY00 PROPOSED ACTION

One hundred and fifty thousand dollars (\$150,000) is requested to match City of Olivet funds to construct a new well and connect it to the existing municipal water system.

## SITE SUMMARY

### Site Name

Woodmere Barrels  
Woodmere Avenue and Premier Street  
Garfield Township, Michigan

County: Grand Traverse

MDEQ District: Cadillac

Site ID#: 280210

MAIN Project#: 455120

Site Score: 17

### LOCATION

This barrel dump is located on the east side of Boardman Lake, south of the United Technologies Automotive, Inc. facility. The parcel consists of twenty-four partially wooded acres with lake frontage. The surrounding properties have light industrial, commercial, and residential uses.

### SITE HISTORY

In the 1950s this parcel was part of Traverse City's first industrial park. The parcel may have been used by the Setwell Corporation for improper disposal practices. It is also believed that the Setwell property, which is adjacent to this property, was also filled with waste. The city of Traverse City used vacant portions of the property for winter snow disposal. Unidentified parties have also used this site for solid waste disposal. The city removed solid waste about ten years ago. Buried drums with suspected paint waste were recently discovered on this property.

United Technologies Automotive, Inc., a non-labile party, has remediated similar conditions from their adjacent property. Heavy metals, cyanide, and solvents were the contaminants of concern.

### SITE STATUS

Melling Tool Company, who has not operated at this location to our knowledge, purchased the property in 1983. The city of Traverse City continues to use the property for winter snow disposal. The public's access to the site is somewhat limited by fencing. Some rusty barrels remain partially exposed on the wooded hillside. It has not been determined how many drums are buried. Heavy metals, cyanide and solvents are suspected to be associated with the drums. Surface samples from visibly impacted areas were collected in December 1998. A geological subsurface survey was initiated in December 1998.

### FUTURE RESPONSE NEEDS

#### INTERIM RESPONSE

Funds are being requested to remove acute hazards associated with the drums and paint waste.

### PROJECTED COST

**\$250,000**

**SPECIAL CONSIDERATIONS**

This prime lakeside property has excellent developmental possibilities. A walking trail has been proposed across the property near the lakeshore. A trail would potentially increase the public's exposure to this location.

**FUNDING HISTORY**

No State funds have been appropriated for or expended at this site.

**FY00 PROPOSED ACTION**

Two hundred fifty thousand dollars (\$250,000) are requested for an interim response action to remove improperly disposed barrels and the associated soil contamination.

\*Note\* As of October 1995, the cleanup program responsibilities were transferred from the Michigan Department of Natural Resources (MDNR) to the Michigan Department of Environmental Quality (MDEQ). As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) for water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ.



## SITE SUMMARY

### Site Name

Gratiot County Landfill  
7391 Croswell Road  
St. Louis, Michigan

County: Gratiot

MDEQ District: Shiawassee/Superfund

Site ID#: 290046

MAIN Project#: 451688

Site Score: 38

### LOCATION

The Gratiot County Landfill site is a 40-acre landfill located on an 80-acre parcel of land at 7391 Croswell Road (formerly 585 East Jackson Road in St. Louis, Michigan. The groundwater treatment system is located on adjacent property to the west of the landfill proper (413 East Jackson Road). The land surrounding the landfill is primarily used for agriculture.

### SITE HISTORY

The Gratiot County Landfill was licensed in 1971 by the Gratiot County Board of Public Works and received domestic, commercial, and industrial solid wastes. The Michigan Department of Natural Resources (MDNR) licensed the landfill for operation in 1974. The MDNR license was subject to several operating conditions. In November 1976, due to operating violations, the MDNR initiated proceedings to revoke the landfill's license and close the facility. In late 1976, the United States Environmental Protection Agency (USEPA) informed the MDNR that 269,000 pounds of polybrominated biphenyl (PBB) contaminated waste was disposed of at the Gratiot County Landfill from 1971 to 1974 by the Michigan Chemical Company (Velsicol).

PBB became widely known in 1973 when livestock feed was accidentally contaminated with BP-6 (PBB), a flame-retardant known as Firemaster. Velsicol at its St. Louis, Michigan facility, manufactured Firemaster. Velsicol also manufactured Nutrimaster, a magnesium oxide-based livestock feed additive. Millions of Michigan's livestock were contaminated by the PBB-laden livestock feed, leading to their destruction. Tons of eggs, milk, butter, cheese, feed, and meat were also destroyed. This incident is considered the most costly and disastrous accidental contamination to have occurred in the United States agricultural history and is estimated to have exposed 90 percent of Michigan's residents to PBB contamination.

A MDNR inspection of the Gratiot County Landfill in March 1977 identified stockpiles of magnesium oxide with no surface cover along the western boundary of the landfill. The landfill operator said the material came from Velsicol and was deposited on the landfill property between 1975 and 1977. The MDNR's analysis of the material indicated that the material contained 1 to 2 ppm of PBB. Additional MDNR inspections during the same period revealed more operation violations.

The MDNR initiated an extensive sampling program including sampling of groundwater, surface water, and soils of the landfill and surrounding area. PBB was detected in groundwater, surface water, and soils on the landfill property and vicinity.

The MDNR initiated remedial measures at the site in 1984. The first phase of remediation included containment of groundwater to minimize migration of contaminants from the site. This work included performing test borings, installation of an 8-inch pumping well, construction of a slurry wall designed to tie into a basal clay layer around the perimeter of the landfill; construction of burial cells in the landfill for PBB-contaminated waste, excavation, transportation, and burial of approximately 20,000 cubic yards of PBB-laden waste from property located on the other side of Jackson Road, installation of a perimeter fence around the

landfill, capping the landfill with a 5-foot-thick compacted clay layer to reduce infiltration, construction of a lagoon to collect and discharge surface water runoff and installation of an evapotranspiration bed to dispose of water from landfill purge wells used for long-term water level control.

In 1991, a five-year review evaluating the effectiveness of the clay cap and slurry wall was completed. It was concluded that the landfill cap was well maintained and provided an effective barrier against surface water infiltration, although gases venting through the ground surface and vegetation impacts were noted in one area. The evaluation identified three areas of the slurry wall that were ineffective in preventing groundwater flow; the southern portion of the east wall, the western portion of the south wall, and the southern portion of the west wall. Volatile organic compounds (VOCs) were detected in samples taken from monitoring wells located outside the slurry wall.

In 1993, MDNR retained Eder Associates (Eder) to prepare a performance evaluation assessment. The assessment consisted of a groundwater investigation to determine the extent of VOC contamination along the southern portion of the western slurry wall, the direction and rate of groundwater flow, the geology and hydrogeology of the site and the nature and extent of any existing or potential impacts on human health and the natural environment. Eder concluded that VOCs do emanate from the slurry wall leak in the southern portion of the west wall and are primarily confined to the lower sands within a narrow paleo-river channel. Eder conducted a focused technology review in which technologies were reviewed to evaluate remedial alternatives that addressed groundwater contaminant source control and plume remediation outside the west/southwestern side of the landfill. Based on Eder's review, MDNR determined that a groundwater extraction system should be installed to contain contaminated groundwater southwest of the site and that the extracted groundwater should be treated prior to discharge.

#### **SITE STATUS**

The State of Michigan currently owns and maintains the closed Gratiot County Landfill. Through a Consent Judgment signed by the MDNR, USEPA, and Velsicol Chemical Company, the State received \$13.5 million to maintain and operate the remediation systems at the closed landfill.

In March 1995, the Michigan Department of Environmental Quality (MDEQ) contracted with ABB Environmental Services, Incorporated (ABB), now Harding Lawson Associates (HLA), to design a groundwater treatment system. Materials Testing Inc. constructed the groundwater treatment system and the treatment began in June 1998. Operations and maintenance on the groundwater treatment system and the landfill is expected to last indefinitely.

#### **ENFORCEMENT STATUS**

Through a joint Consent Judgment with MDNR, USEPA, and Velsicol Chemical Company, the MDNR received \$13.5 million to investigate, remediate, and maintain the landfill. The settlement fund is nearly expired and the potentially liable parties (PLPs) have received a release through the Consent Judgment for costs beyond the \$13.5 million.

#### **RESPONSE ACCOMPLISHMENTS**

#### **EXPENDITURES**

##### **ALTERNATE WATER**

**\$791**

Bond contingency funds were used to monitor the threatened well near the landfill.

##### **BOTTLED WATER**

**\$1,000**

Bottled water was provided to the owner of the house while arrangements were made to purchase the property for use in the response activity. Bond contingency funds were used for this activity.

#### **REMEDIAL INVESTIGATION/FEASIBILITY STUDY**

**unknown**

The MDNR completed an initial investigation in 1970, which evaluated the suitability of the site for landfill construction. Nine soil borings were completed, but no monitoring wells were installed during the investigation. The results of the investigation provided operational guidelines for the landfill.

The MDNR and Keck Consulting Service, Incorporated (Keck) completed a Phase I Hydrogeologic Investigation in 1977 at the Gratiot County Landfill. The investigation included soil borings and monitoring well installation. Traces of PBB and elevated levels of other contaminants were detected in the shallow groundwater aquifer near the site. The site investigation revealed complex hydrogeologic and subsurface conditions warranting a more detailed hydrogeologic investigation.

The MDNR conducted a Phase II Hydrogeologic Study in 1978. Soil and groundwater conditions at, and near, the landfill were characterized by 155 soil borings and 45 monitoring wells completed by Keck and Hart Well Drilling. The Phase I and Phase II studies identified four stratigraphic units and three aquifer systems near the landfill.

Reports based on previously obtained information were completed in 1978, 1979, and 1980. A Phase III Hydrogeologic Investigation conducted by Keck was completed in 1980. Two monitoring wells and a pumping well were installed as part of this study. The investigation summarized aquifer characteristics and pumping test data.

#### **REMEDIAL ACTION**

**\$10,000,000**

The MDNR initiated remedial activities at the Gratiot County Landfill in 1984. The first phase of the remedial activities included the containment of groundwater and the prevention of contaminant migration. This phase also included the following: completing 27 soil borings, installing an 8-inch diameter pumping well, constructing a slurry wall around the landfill perimeter, constructing burial cells for the disposal of PBB-laden waste located on the property across from the landfill on Jackson Road, installing a fence around the landfill, capping the landfill with a 5-foot thick compacted clay layer, constructing a concrete wastewater lagoon, and installing an evapotranspiration bed to dispose of water from landfill purge wells used for long-term water level control.

The second phase of remedial activities included a Groundwater Purge System Design Phase I Investigation of the landfill completed by E.C. Jordan in June 1986. The investigation consisted of installing three monitoring wells within the landfill refuse, installing one monitoring well and a pumping well in the local aquifer, and collecting Shelby tube samples from the slurry wall. The second phase of the Groundwater Purge System Design Phase II Investigation for the landfill consisting of a purge system construction was never completed.

**OPERATIONS AND MAINTENANCE****\$50,000**

E.C. Jordan submitted a technical memorandum to the MDNR in August 1986 providing computer data plots and tables summarizing groundwater quality (March 1977 to February 1986) and elevations (May 1986) and a quantitative assessment of on-site groundwater trends related to the slurry wall and cap emplacement. E.C. Jordan indicated in the memorandum that groundwater quality data, as of February 1986, showed no significant overall trend as a result of the slurry wall and cap. Their interpretation of potentiometric data suggested that the slurry wall is an effective barrier separating groundwater flow inside the wall from groundwater flow outside the wall.

GZA-Donohue (GZA) provided the MDNR with an evaluation of existing site data and a monitoring scheme, an evaluation of the slurry wall and clay cap effectiveness, and remedial action recommendations for the Gratiot Landfill site in the Hydrogeological Investigation Report, January 1992. GZA performed on-site activities from September 1989 through December 1991. GZA activities included test boring, monitoring well installation, soil head space testing, geophysical testing, groundwater sampling, surface water sampling, hydraulic conductivity testing, pressure transducer installation, weather station installation, storage lagoon decommissioning, and groundwater elevation monitoring.

GZA evaluated the effectiveness of the slurry wall by comparing groundwater quality, elevation, and flow direction between well pairs set on opposite sides of the slurry wall. Three areas of the slurry wall were identified by GZA as ineffective in preventing groundwater flow. These areas are the southern portion of the east wall, the western portion of the south wall, and the southern portion of the west wall. Volatile organic compounds (VOCs) were detected in samples from monitoring wells G12-D and G16-D, which are on opposite sides of the southern portion of the west slurry wall (Figure 2). Detectable VOCs included chloroethane, 1,1-dichloroethane, and 1,2-dichloroethane, ranging from 10 to 30 ug/L. Benzene was detected in wells G13-D and G16-D at concentrations of 44 and 300 ug/L, respectively. GZA evaluated two alternatives to minimize groundwater flux through the landfill in a document dated August 4, 1992. These two remedial alternatives were repair of the slurry wall through reconstruction or grouting, and controlling leakage by groundwater pumping.

GZA concluded that the landfill cap was well maintained and provided an effective barrier against surface water infiltration. No cap erosion was observed, and vegetation was characterized as well established and controlled. Surface water ponding was observed in several areas of the site. GZA concluded that the ponding was not a significant threat to the structural integrity of the cap. GZA indicated that gas vent maintenance and repairs may be needed. Observations of gas venting through the ground surface and impacts on vegetation growth were noted in at least one area.

The MDNR retained EDER Associates (EDER) in December 1993 to conduct a Preliminary Environmental Assessment consisting of a groundwater investigation to determine the extent of VOC contamination identified at monitoring well G13-D, located along the southern portion of the west slurry wall. Field activities were conducted in two phases and included the completion of soil borings, vertical groundwater profile borings with field gas chromatograph (GC) screening and monitoring well installation and sampling.

A suspected paleo-river channel was encountered trending west, southwest from the southwest corner of the landfill. The narrow nature of the VOC plume supports the theory that a paleo channel exists in the till clay layer below the site. The contamination appears to be migrating in a preferred pathway of sand and gravel within the paleo channel. Till clay topography as well as the sands and gravels above the till appear to be providing a controlled "channel" pathway for the contamination to migrate from the source area.

Landfill gas vent operational status was field evaluated on May 18, 1994. Field evaluation included measurement of pressure across the carbon filter of each vent, measurement of gas concentration at each vent and notation of vegetation condition surrounding each vent.

On October 27, 1994, B & V Construction, with EDER oversight, disassembled each gas vent and replaced the activated charcoal filter packs. While the gas vents were disassembled their subsurface extremities were probed for blockage. Nothing blocking or obstructing the gas vents was observed. The area surrounding vent #5 remained devoid of vegetation although vent #5 was venting at the highest rate and volume relative to the other vents. During gas vent maintenance activities continuous air monitoring for combustible gas concentration and toxicity were conducted.

A human health risk assessment and natural environment impact evaluation was completed by the Agency for Toxic Substance and Disease Registry (ATSDR)/Michigan Department of Public Health (MDPH). The document dated August 29, 1994 was entitled, "Site Review and Update (SRU) for the Gratiot County Landfill Site". The purpose of the SRU was not to discuss the status of the hazardous waste site, but to identify future ATSDR activities planned for the site. The conclusions of the Gratiot County Landfill SRU indicate that, at this time, the landfill site poses no apparent health hazard and there is no apparent need for further health assessment, consultation or study.

<b>REMEDIAL DESIGN</b>	<b>\$750,000</b>
The MDEQ contracted with ABB Environmental Services to design a groundwater treatment system. The groundwater treatment system design was completed in early 1997.	

<b>REMEDIAL ACTION</b>	<b>\$380,000</b>
Construction on the groundwater treatment system began in October 1997 and was completed in May 1998. The groundwater treatment system consists of two extraction wells that pump contaminated groundwater to the treatment building where it is first pumped through a settlement tank and then through an air stripper. Treated groundwater is then pumped onto the landfill for discharge through the evapotranspiration bed.	

<b>OPERATIONS AND MAINTENANCE</b>	<b>\$440,000</b>
Funding is needed to operate and maintain the groundwater treatment system. Preliminary estimates include approximately \$44,500 for groundwater extraction, \$186,000 for groundwater monitoring, and \$179,000 for granular activated carbon.	

## **FUTURE RESPONSE NEEDS**

## **PROJECTED COST**

**OPERATIONS AND MAINTENANCE****\$440,000 annually**

Additional funding will be needed annually to operate and maintain the groundwater treatment system. Rough annual estimates include approximately \$44,500 for groundwater extraction, \$186,000 for groundwater monitoring, and \$179,000 for granular activated carbon.

**REMEDIAL ACTION****\$7,000,000**

Funding in the amount of \$7,000,000 is needed for the construction of a new cap including a flexible membrane liner on the landfill. This site will be added to the FY 2000 funding appropriation request for \$1,000,000 and FY 2002 for an additional \$6,000,000.

**SPECIAL CONSIDERATIONS**

Through the 1983 joint Consent Judgment with Velsicol, MDNR and USEPA, the State of Michigan has sole responsibility for this landfill.

**FUNDING HISTORY**

General Fund Authorizations			Bond Fund Appropriations					
YEAR	ACTION	AMOUNT	YEAR	ACTION	AMOUNT	YEAR	ACTION	AMOUNT
			1996	RA	\$0 <sup>t</sup>	1998	O&M	\$400,000
			1999	OM	\$750,000 <sup>t</sup> <sub>1</sub>			

**FY00 PROPOSED ACTION**

Four hundred and forty thousand dollars (\$440,000) are requested to operate and maintain the groundwater treatment system. Additional funds in the amount of seventy thousand dollars (\$70,000) will be transferred to complete these activities for two years.

\*Note\* As of October 1995, the cleanup program responsibilities were transferred from the Michigan Department of Natural Resources (MDNR) to the new Michigan Department of Environmental Quality (MDEQ). As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) for water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ.

<sup>t</sup> \$1,000,000 was transferred to this appropriation.

<sup>t1</sup> \$880,000 were transferred to this activity from another Bond site.



## SITE SUMMARY

### Site Name

Port Austin PCE Plume

Port Austin, Michigan

County: Huron

MDEQ District: Saginaw Bay

Site ID#: 320084

MAIN Project #: 455171

Site Score: 30

### LOCATION

The site is located in Port Austin, Michigan in the vicinity of Fine Oaks Trail and Port Austin Road between Tripp Road and Bay Crest Drive. The area is predominantly residential with Lake Huron located adjacent to the west.

### SITE HISTORY

Limited history is available for the majority of the area with most historical information available only for a former laundry located at 967 Port Austin Road.

Reportedly, dry cleaning operations were conducted at the property "sparingly" until about 1988 when the dry cleaning equipment was removed. Waste generated at the site was dumped above grade at the property, placed in a septic type holding tank on-site, and, most often, disposed of off-site at an open dump on Sand Road (located about a ½ mile north of Crescent Road on the east side). In November 1992, the laundry was closed and the holding tanks were pumped out. The impact identified beneath the area is predominantly perchloroethylene (PCE). The suspected source of the impact is the former dry cleaners/laundry, but this is not confirmed.

The level of PCE impact identified within potable wells in the area range from non-detect to 25.3 ppb. The current residential drinking water criteria for groundwater are 5 ppb.

The acute public health and environmental problem that is affecting the area is the impact of multiple potable wells with PCE at levels in excess of the drinking water criteria. It is also likely that the PCE impacted groundwater is discharging into Lake Huron. A limited site investigation, completed within the shallow subsurface of the former laundry property, did not identify significant impact. Additional remedial investigation activities are scheduled for the site with the purpose of defining the extent and identifying the source of the PCE impact.

The Drinking Water and Radiological Protection Division (DWRPD) is currently monitoring the impacted potable wells in the area. The Michigan Department of Public Health (MDPH) has reportedly supplied the impacted residences with bottled water.

### SITE STATUS

There are currently 14 properties in the area which have quarterly/annual monitoring of their potable wells conducted by the DWRPD. The source of the PCE impact identified beneath the site has not yet been conclusively determined. The information generated during currently scheduled remedial investigative activities is expected to provide more detailed information. Activities regarding the identified groundwater PCE plume have not yet been conducted for the area.

### ENFORCEMENT STATUS

Enforcement activities are currently on hold pending the confirmation of the source of the impact.

### RESPONSE ACCOMPLISHMENTS

### EXPENDITURES

November 1998

**BOTTLED WATER****\$3,000**

Bottled water is being provided to homes effected by the contamination above the drinking water criteria. These funds were made available through an emergency authorization.

**FUTURE RESPONSE NEEDS****ALTERNATE WATER****\$60,000**

To conduct well replacements to residential homes found contaminated above residential drinking water criteria.

**REMEDIAL INVESTIGATION****\$25,000**

Future response activities will depend upon the results of currently scheduled investigative activities and well monitoring results of the potable wells in the area.

**FUNDING HISTORY**

No state funds have been appropriated or expended at this site.

**FY00 PROPOSED ACTION**

Eighty five thousand dollars (\$85,000) are requested to conduct an initial remedial investigation and to provide permanent safe drinking water to impacted residences. Any additional activities needed will be dependent upon the identification of the source of the PCE impact and size of the plume and a permanent solution for the impacted drinking water wells.

\*Note\* As of October 1995, the cleanup program responsibilities were transferred from the Michigan Department of Natural Resources (MDNR) to the Michigan Department of Environmental Quality (MDEQ). As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) for water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ.



## SITE SUMMARY

### Site Name

PCE Plume East Tawas  
US-23 and Main Street  
East Tawas, Michigan

County: Iosco

MDEQ District: Saginaw Bay

Site ID#: 350096

MAIN Project#: 454816

Site Score: 41

### LOCATION

PCE Plume East Tawas is in the vicinity of the US-23 and Main Street intersection. The area is a mix of commercial and residential activity. The Tawas State Dock, with its associated recreational use, is located in the plume area. The City of East Tawas is served by municipal water.

### SITE HISTORY

Chlorinated hydrocarbon contamination was discovered as a result of a 1995-1996 hydrogeological investigation to delineate contamination resulting from a leaking underground storage tank (UST) at the Tawas State Dock. A review of the Michigan Department of Environmental Quality (MDEQ), Storage Tank Division, sites indicated two leaking underground sites located upgradient of the Tawas State Dock site. The upgradient sites are William Look & Sons, an automobile dealership and repair shop, and Bay Amoco, a former gasoline service station. Discussions with local business owners and operators indicate that a former dry cleaning establishment was located hydraulically upgradient and is another source of contamination. Tetrachloroethylene was found in the soil at the former dry cleaning establishment at five times the concentration protective of groundwater (500ppb.) The deeper chlorinated hydrocarbon groundwater contamination plume does not appear to be commingled with the gasoline plume associated with the Tawas State Dock UST release. The plume of chlorinated hydrocarbons consists of the following:

Contaminant	Amount	Times over health based drinking water criteria
vinyl chloride	17 ppb	8
1,1-dichloroethylene	18 ppb	2
<i>cis</i> -1,2-dichloroethylene	1,254 ppb	17
trichloroethylene	883 ppb	176
tetrachloroethylene	1060 ppb	212

Vinyl chloride, trichloroethylene, and tetrachloroethylene are carcinogens. Vinyl chloride; 1,1-dichloroethylene; and *cis*-1,2-dichloroethylene appear to be venting to Tawas Bay. Current generic groundwater surface water interface (GSI) criteria for the above compounds are as follows:

Contaminant	GSI Criteria
vinyl chloride	15 ppb
1,1-dichloroethylene	65 ppb
<i>cis</i> -1,2-dichloroethylene	has not been established
tetrachloroethylene	45 ppb
trichloroethylene	200 ppb

### SITE STATUS

November 1998

Thirty monitoring wells, in close proximity to the site, were sampled on September 15, 1998. MDEQ's Environmental Response Division (ERD) district staff will review the analytical results when they are completed. Soil and groundwater samples need to be collected to further investigate the dry cleaner source.

#### **ENFORCEMENT STATUS**

ERD district staff is in the process of determining if there are any potentially liable parties (PLPs).

#### **FUTURE RESPONSE NEEDS**

#### **PROJECTED COST**

##### **INTERIM RESPONSE**

**\$300,000**

Interim response funds are needed to investigate the source(s), implement source control measures, collect sufficient groundwater information for a mixing zone determination, and implement response activities for the groundwater contamination if the mixing zone assessment deems it necessary.

##### **OPERATION AND MAINTENANCE**

**\$250,000**

Funds are needed to operate and maintain soil and/or groundwater treatment systems installed during the interim response to prevent human and environmental exposure. Fifty thousand dollars (\$50,000) per year, for up to five years, will be needed in the future.

#### **FUNDING HISTORY**

No state funds have been appropriated or expended at this site.

#### **FY00 PROPOSED ACTION**

Three hundred thousand dollars (\$300,000) are requested to remediate contaminated soil and collect groundwater information to perform a mixing zone determination. Based upon the mixing zone determination, funds may also be used to remediate the contaminated groundwater and/or intercept the plume to reduce impacts to Tawas Bay and Lake Huron.

\*Note\* As of October, 1995, the cleanup program responsibilities were transferred from the Michigan Department of Natural Resources (MDNR) to the Michigan Department of Environmental Quality (MDEQ). As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) for water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ.

## SITE SUMMARY

### Site Name

West Jackson Groundwater Contamination  
West Michigan Avenue and Wildwood Avenue  
Jackson, Michigan

County: Jackson

MDEQ District: Jackson/DWRPD

Site ID#: 380229

MAIN Project#: 454009

Site Score: 42

### LOCATION

The West Jackson Groundwater Contamination site is composed of residential neighborhoods adjacent to several heavy industrial, and some commercial properties. The area is located on the boundaries of Blackman and Summit Townships in Jackson County, Michigan.

### SITE HISTORY

The Michigan Department of Public Health (MDPH) discovered the site in response to a resident complaining about the quality of the well water. Since the home was located adjacent to a facility on the Act 307 List of Sites of Environmental Contamination, that well and another one in the area were sampled. Although the well of the resident who complained was clean, the other was not. Continued sampling in the area revealed many wells contaminated with varying levels of industrial solvents. Levels in one residential well exceeded the MDPH criteria for safe body contact. Other levels have ranged from two to three times the health based criteria for safe drinking water. Companies in the area were contacted and requested to either continue or begin investigations of their properties. All companies contacted cooperated and the sources of the contamination were identified. The Michigan Department of Environmental Quality (MDEQ) began its own investigation utilizing internal resources in the fall of 1993. This investigation has confirmed some sources, but the full extent of the contamination has not been defined.

### SITE STATUS

The site is currently awaiting further remedial investigation. This will be performed by the MDEQ.

### ENFORCEMENT STATUS

The results of the first phases of investigation identified two sources of contamination in the southern portion of the site and one source in the northern portion. The process of notifying potentially liable parties (PLPs) is almost complete.

### RESPONSE ACCOMPLISHMENTS

### EXPENDITURES

#### ALTERNATE WATER

**\$1,128,500**

The Michigan Department of Natural Resources (MDNR) requested monies be provided for connecting approximately 175 residences in the area of contamination to the municipal water supply and plug the wells they are currently using. This provided safe drinking water for these homes and removed the residential wells as potential conduits for contamination to migrate deeper into the ground. This action has been accomplished.

#### REMEDIAL INVESTIGATION

**\$100,000**

The Environmental Response Division's (ERD), Geological Services Section, investigated several sources of contamination.

**\$1,200,000**

In addition, several private parties have undertaken investigations at their properties to characterize the contamination present. This work has been performed with private

November 1998

funds.

**\$29,000**

Malcom-Pirnie completed data verification activities in 1997.

## **FUTURE RESPONSE NEEDS**

## **PROJECTED COST**

### **REMEDIAL INVESTIGATION**

**\$700,000**

The remedial investigation currently underway by the MDEQ should be carried out to completion. The contaminant plume will continue to migrate and affect more residential wells. This work was approved in a FY94 Bond appropriation; however, no dollars were appropriated.

### **REMEDIAL ACTION**

**\$10,000**

Although some sources have been identified, it is unknown whether the PLPs will be able to undertake the necessary remedial actions. This is especially true of the major portion of the southern plume, which appears to be orphaned. Should this action fall upon the state, it is unlikely that the most efficient use of funds would be to remediate the groundwater. Rather, funding would be requested to model the fate and transport of contamination and perhaps implement institutional controls.

## **FUNDING HISTORY**

<b>General Fund Authorizations</b>			<b>Bond Fund Appropriations</b>						
Year	Action	Amount	Year	Action	Amount	Action	Amount	Action	Amount
			1994	AW	\$1,300,000 <sup>t</sup>	RI	\$0 <sup>t1</sup>		

### **FY00 PROPOSED ACTION**

Ten thousand dollars (\$10,000) are requested to determine the fate of the orphan plume in order to determine the appropriate response needed. This may include implementing institutional controls.

\*Note\* As of October 1995, the cleanup program responsibilities were transferred from the Michigan Department of Natural Resources (MDNR) to the Michigan Department of Environmental Quality (MDEQ). As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) for water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ.

<sup>t</sup> \$858,720 were transferred from this activity to another Bond site.

<sup>t1</sup> \$200,000 were transferred to this activity from another Bond site.

## SITE SUMMARY

### Site Name

Motor State Oil & Grease (MSOG)  
155 Hobart Street  
Jackson, Michigan

County: Jackson

MDEQ District: Jackson

Site ID#: 380316

MAIN Project #: 454416

Site Score: 19

### LOCATION

This 3-acre site is located in the northern portion of the city of Jackson and is zoned for light industrial use. Adjacent property usage includes industrial, residential and vacant land. There are currently no buildings on the site. The concrete floor and foundation of one or more former building(s) are located on the site. The Grand River is less than ¼ mile west of the site.

### SITE HISTORY

An Environmental Site Assessment (ESA), performed with Site Assessment Grant funds in 1995, and reported on January 22, 1997, indicates the primary operations at the site consisted of the formulation and distribution of lubricating oils and greases. The company was established in 1904. The property has been vacant since a fire destroyed the buildings in 1975. The City of Jackson obtained the property through tax reversion in 1994. The ESA documents multicolored liquids being discharged in 1970 and 1971 from Motor State Oil & Grease (MSOG) buildings to a pond (located off the property) and subsequently to the Grand River. This information was obtained during an interview of an individual who witnessed and photographed the discharge. Aerial photographs are consistent with this information. Analysis of soil samples collected from the site indicates petroleum constituents are present on the property. One soil sample contained 2,700 ppb phenanthrene, which exceeds the groundwater/surface water interface (GSI) of 2,300 ppb for this constituent.

### SITE STATUS

An environmental assessment was conducted on the property in order to promote reuse.

### RESPONSE ACCOMPLISHMENTS

#### ENVIRONMENTAL SITE ASSESSMENT

**\$4,686**

A state-funded ESA was performed to assess environmental conditions at the property. This ESA data was intended to provide a new occupant with the information necessary to produce a BEA and perform due care obligations.

### EXPENDITURES

### FUTURE RESPONSE NEEDS

#### REMEDIAL INVESTIGATION

**\$150,000**

Additional investigation is necessary to assess if the risk to public health associated with the discharge pond is acceptable.

### PROJECTED COST

**FUNDING HISTORY**

No state funds have been appropriated or expended at this site.

**FY00 PROPOSED ACTION**

One hundred fifty thousand dollars (\$150,000) are requested to assess the risk associated with the discharge pond.

## SITE SUMMARY

### Site Name

Downtown Parma Wells  
Main & Union  
Parma, Michigan

County: Jackson

MDEQ District: Jackson/DWRPD

Site ID#: 380318

MAIN Project #: 454495

Site Score: 28

### LOCATION

The downtown Parma wells are located in the western portion of the village of Parma in Sandstone Township. Land use at the site is residential, industrial and commercial.

### SITE HISTORY

In 1995 Drinking Water and Radiological Protection Division (DWRPD) staff found several drinking water wells in the center of the village of Parma contaminated with high concentrations of gasoline constituents. The impacted residences and businesses were provided with bottled water. As of 1998 subsequent investigation by DWRPD ultimately identified approximately sixty drinking water wells impacted or threatened by gasoline constituents and/or chlorinated hydrocarbons. The wells impacted by the chlorinated hydrocarbons are on the west side of Parma, while the wells impacted by gas constituents are located in the center of Parma. A few of the wells in the area adjacent to the two plumes contain both types of contaminants, but the two plumes appear to be distinguishable based on DWRPD analytical results. A state-funded permanent alternate water feasibility study, conducted on behalf of the village of Parma in 1997, recommended installation of a publicly-owned water supply system.

The source of the gas contamination impacting or threatening approximately sixty percent of the sixty wells has been identified as an active Part 213 Leaking Underground Storage Tank (LUST) site. The Storage Tank Division (STD) is providing regulatory oversight of the ongoing investigation and eventual remediation of the gas plume by the liable party. The source of the chlorinated hydrocarbons impacting or threatening the additional wells is unknown and the plume comprising the Part 201 Environmental Remediation site on the west side of Parma is considered orphaned. A limited remedial investigation to determine groundwater flow direction in the shallow, unconfined aquifer and identify the source(s) of the chlorinated hydrocarbons affecting drinking water wells was conducted in 1997 by the Geological Services Section (GSS) of the Environmental Response Division (ERD). The investigation documented groundwater contaminated with chlorinated hydrocarbons, including 470 ppb of tetrachloroethane. The groundwater has a radial groundwater flow direction. The investigation identified two potential sources of chlorinated hydrocarbons; a former dry cleaner at 208 West Main Street and the Minder Machine property at 119 Railroad Street.

### SITE STATUS

A Type I municipal water system for the portion of the proposed alternate water project area attributable to the chlorinated hydrocarbons is in progress. Construction of the system is pending STD's approval, funding for the gas plume, and Parma residents' acceptance of the State's offer to provide this permanent alternate water. DWRPD staff will continue to monitor area drinking water wells and provide bottled water to impacted residents.

**RESPONSE ACCOMPLISHMENTS****EXPENDITURES****BOTTLED WATER****\$2,200**

Bottled water is being provided to impacted residences and businesses.

**ALTERNATE WATER****\$1,388,000**

The estimate provided is the total project cost of the Type I municipal water system. The STD will assume responsibility for cost recovery of sixty percent of the total cost, which is attributable to the Part 213 site. Work will begin as soon as the community approves of the workplan.

**REMEDIAL INVESTIGATION/ FEASIBILITY STUDY****\$12,000**

A limited remedial investigation was conducted by the ERD's GSS. A state-funded feasibility study to evaluate permanent alternate water options was conducted.

**FUTURE RESPONSE NEEDS****PROJECTED COST****REMEDIAL INVESTIGATION****\$500,000**

A remedial investigation is necessary to determine if the risk posed by contaminated soil and groundwater is acceptable.

**REMEDIAL ACTION****unknown**

Based on the results of the remedial investigation, remedial action may be required to abate unacceptable risk to public health and the environment.

**FUNDING HISTORY**

General Fund Authorizations			Bond Fund Appropriations				
YEAR	ACTION	AMOUNT	YEAR	ACTION	AMOUNT	ACTION	AMOUNT
			1997	AW	\$150,000 <sup>t</sup>		
			1998	AW	\$1,000,000		

**FY00 PROPOSED ACTION**

Three hundred eighty one thousand dollars (\$381,000) in new appropriations, along with savings at other sites for a total of \$500,000, are requested to conduct a remedial investigation to assess the risk posed by the site and remove source soils.

\*Note\* As of October 1995, the cleanup program responsibilities were transferred from the Michigan Department of Natural Resources (MDNR) to the Michigan Department of Environmental Quality (MDEQ). As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) for water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ

<sup>t</sup> \$250,000 were transferred to this activity from another Bond site



## SITE SUMMARY

### Site Name

Bay Oil Bulk Plant  
M-66 Southwest  
Kalkaska, Michigan

County: Kalkaska

MDEQ District: Cadillac

Site ID #: 400052

MAIN Project#: 450610

Site Score: 35

### LOCATION

The Bay Oil Bulk Plant is located on M-66 in a residential/commercial setting south of Kalkaska in Kalkaska County. The site is approximately one-half mile south of M-72 on the west side of M-66. Area residents rely on private water supply wells for their drinking water.

### SITE HISTORY

The property was an aboveground bulk fuel storage facility since before 1973 and is currently owned by Bay Oil Company. In October 1990 a fuel truck spilled approximately 30-50 gallons of heating oil. Contaminated soil was excavated and limited verification sampling was conducted. Sample results indicated that additional investigation and sampling was necessary.

In December 1991 a consulting firm, hired by Bay Oil Company, conducted a limited soil and groundwater investigation in the area immediately around the aboveground storage tanks. Although a complete report was never received from Bay Oil Company, analytical results received from their consultant documented lead contamination in the groundwater at 370 ppb, which is 92 times the current drinking water protection criteria. Additionally, on December 11, 1991, district staff noted a new fuel spill near the northeast corner of the fence. There are no records of this spill being cleaned up.

The facility ceased operating in 1991. The owner removed the five aboveground bulk fuel tanks, piping, loading docks, and an underground storage tank (UST) between 1994 and 1996.

Additional investigation was to have been conducted by Bay Oil Company in August 1997; however, the Michigan Department of Environmental Quality has not received a report or any sample results.

### SITE STATUS

In September 1998, Environmental Response Division's (ERD) Geological Services Section conducted a limited investigation of the soil and groundwater at the site. Analytical results indicate volatile organic compounds (VOC) in the soil and groundwater above the current residential cleanup criteria. Benzene was detected in the groundwater at 28 ppb, which is 5.6 times the current drinking water criteria. 1,2,4-Trimethylbenzene was found in the soil at 180,000 ppb, which is 5.3 times the drinking water protection criteria. Xylenes were detected in the soil at 209,000 ppb, which is 37 times the drinking water protection criteria. Lead was detected in the soil at 43 parts ppm, which is twice the statewide default background level. However, lead was not detected in the groundwater leading staff to believe the analytical results obtained in 1991 were from an unfiltered groundwater sample.

If the potentially liable parties (PLPs) are unable to take needed response actions, district staff will prepare bid specification documents to remediate source area soils. Additional groundwater monitoring will be conducted to determine if groundwater remediation is necessary. The ERD is pursuing an "approved partial closure" for this site.

**ENFORCEMENT STATUS**

A liability review will be conducted and persons who may be liable under Part 201 will be notified of their responsibility to take response actions.

**RESPONSE ACCOMPLISHMENTS****EXPENDITURES****INTERIM RESPONSE****private -- unknown**

During February 1991, 130 cubic yards of petroleum contaminated soil were excavated and disposed of at a licensed Type II landfill. Three monitor wells and four soil borings were installed during December 1991.

**REMEDIAL INVESTIGATION****unknown**

In September 1998 ERD's Geological Services Section installed 11 soil borings, three monitor wells and collected a total of 46 samples. Costs for the mobile laboratory, analytical procedures, and disposal of development water were \$2,640.

**FUTURE RESPONSE NEEDS****PROJECTED COST****INTERIM RESPONSE****\$300,000**

Interim response activities will be directed at source control and will include contaminated soil removal/disposal and verification sampling.

**SPECIAL CONSIDERATIONS**

The local drinking water supply is threatened.

**FUNDING HISTORY**

No state funds have been appropriated for this site.

**FY00 PROPOSED ACTION**

Three hundred thousand dollars (\$300,000) are requested to delineate source area(s) of soil contamination and for its removal/disposal.

## SITE SUMMARY

### Site Name

Former Autostyle Plastics, Inc.  
2369 Breton Industrial Drive, SE  
Grand Rapids, Michigan

County: Kent

MDEQ District: Grand Rapids

Site ID#: 410113

MAIN Project#: 450538

Site Score: 38

### **LOCATION:**

The facility is located in Grand Rapids, Michigan, Kent County. The area is a mixture of light industrial, commercial and residential properties.

### **SITE HISTORY:**

Autostyle (C & F Stamping) produced automobile components and used various volatile organic compounds in their painting operations. The first incident reported in the Michigan Department of Environmental Quality (MDEQ) files dates back to 1980. From 1980 to 1996, MDEQ had many historical reported releases to the groundwater and soils from this facility. The largest release was discovered by Autostyle Plastics, Inc. personnel during excavation activities for building expansion during December 1987. The source of the release was the paint mix room and the drain/cistern system located directly south of the building. During excavation adjacent to the paint mixing room, volatile organic compounds were discovered floating on the groundwater. To collect the free product, three (3) four foot diameter sumps were installed and the drain and cisterns connected to the paint mix room were excavated and removed (1988). Monitoring wells were installed both upgradient and downgradient from the source area (paint mix room). The extent of contamination showed impacts to the groundwater on-site and off-site and to off-site surface water (a drain which connects to Plaster Creek).

In 1990, a Biological Activated Sludge System (B.A.S.S.), and a Soil Vapor Extraction System (SVE) were installed. The recovered groundwater was treated biologically and discharged to the Grand Rapids Publicly Owned Treatment Works. The soil vapor extraction system was installed on-site to remove contaminated soil vapors and then incinerate the vapors. The remediation systems operated from 1990 to 1996.

In 1996, AutoStyle Plastics, Inc. filed for bankruptcy and shut down the SVE and groundwater treatment system. (The property was being rented by AutoStyle from Breton Commercial Properties, BCP.) Therefore, in 1997, BCP installed an activated charcoal groundwater treatment system.

In December 1998 the BCP informed the MDEQ that the property had been sold to "PermaLife" and that the groundwater treatment system would be shut down at the end December 1998.

Groundwater on-site and off-site remains contaminated above the health based drinking water and the aesthetic drinking water values (January 1996 Quarterly Monitoring). Surface water off-site remains contaminated above the groundwater surface water interface value (January 1996 Quarterly Monitoring).

### **SITE STATUS**

Groundwater at the Autostyle Plastics, Inc (Breton Road facility) site has been documented to be contaminated with hazardous substances above Part 201 residential standards. The following contaminants and concentrations were taken from the "January 1996 Quarterly Monitoring at Autostyle Plastics" document, prepared by Earth Tech: toluene - 1511.0 mg/l,

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Acetone - 7.00 mg/l, Isopropanol - 5.5 mg/l, ethylbenzene - 4.1 mg/l, and xylene - 14.88 mg/l. The groundwater is contaminated on and off site. A reduction in groundwater plume size and contaminant concentrations is apparent since system startup (January 1996 Quarterly Monitoring). However, total cleanup of the groundwater and surface water contamination has not been achieved at this time (January 1996 Quarterly Monitoring). The remediation systems must remain operational to cleanup the remaining impacted areas to satisfactory levels (Part 201 criteria).

The surface water drain connected to Plaster Creek has also been impacted by the groundwater contamination. In the January 1996 Quarterly monitoring report, toluene was found in the drain at 2,070 ppb.

### **ENFORCEMENT STATUS**

There are no liable parties other than the known liable party, Autostyle Plastics who is bankrupt. The former owners of the property, Breton Commercial Properties, BCP, have no documented liability with the groundwater contamination. The current owners of the property, PermaLife, have disclosed a Category C Baseline Environmental Assessment.

### **FUTURE RESPONSE NEEDS**

### **PROJECTED COST**

A groundwater treatment system must continue to operate at this facility to protect the surface water receptors. Currently, the groundwater treatment system is not operating and the MDEQ is in discussions with BCP on taking over the system.

### **INTERIM RESPONSE**

**\$100,000**

MDEQ proposes to evaluate the current groundwater treatment system and determine if additional purge wells are necessary to stop the groundwater plume from reaching the drain. Additional investigation is also proposed to determine the vertical and horizontal extent of contamination. The groundwater treatment system needs to continue operation.

### **FUNDING HISTORY**

No state funds have been appropriated for or expended at this site.

### **FY00 PROPOSED ACTION**

One hundred thousand dollars (\$100,000) will be transferred into this appropriation from savings from other sites. This project includes evaluation of the current groundwater treatment system and determination if additional purge wells are necessary to stop the groundwater plume from reaching the drain. Additional investigation is also proposed to determine the vertical and horizontal extent of contamination.

\*Note\* As of October 1995, the cleanup program responsibilities were transferred from the Michigan Department of Natural Resources to the Michigan Department of Environmental Quality (MDEQ). As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ.

## SITE SUMMARY

### Site Name

Ivan's Canoe Rental  
U. S. 10  
Sweetwater Twp.

County: Lake

MDEQ District: Cadillac

Site ID #: 430014

MAIN Project #: 451972

Site Score: 18

### LOCATION

The site is located on ten acres of land, three-fourths of a mile east of Branch, on the north side of U.S. 10, section 18, W1/4, SE 1/4, SE 1/4, Sweetwater Township.

### SITE HISTORY

Herman Stevensen, the owner of the property in the late 1960s and early 1970s, leased the property to Rieth-Riley Construction Company. The site was used to set up an asphalt batch plant for resurfacing U.S. 10 and for the Ludington Pump Storage Project.

Fuel oil was used as a releasing agent. The fuel oil was sprayed in the boxes of dump trucks so the asphalt would slide out easier. Trichlorethylene (TCE) was also used as an extraction solvent in destruction testing of asphalt batches. Several tests were run each day to insure that the asphalt was meeting specifications. The testing was performed by Michigan Department of Transportation (MDOT) personnel for the construction of U.S.10. Ebasco Engineering Corporation and/or Pittsburgh Testing Laboratories also used TCE to perform extraction tests for the Ludington Pump Storage Project. The waste solvent was disposed onto the ground.

A hand stabbed well on the property has an aesthetic impact of fuel oil. TCE, a known carcinogen, is found in the groundwater at 30 parts per billion (ppb). The residential drinking water criteria for TCE is 5 ppb. The extent of the groundwater contamination has not been defined.

### SITE STATUS

William Davis and Harold Davis are the current owners of the property. They use the property for camping. Fuel oil was discovered in the groundwater when the hand stabbed well was installed.

The potentially liable party (PLP) has been reluctant to continue further investigation to define the contamination.

### ENFORCEMENT STATUS

In 1993, information requests were mailed to all known PLPs. The responses to these information requests described activities that are considered releases of hazardous substances. The PLPs are MDOT, Rieth-Riley Construction, Harold Davis, William Davis, and Professional Services Industries. Rieth-Riley Construction Company has indicated that the new Part 201 amendments have relieved them of liability.

**RESPONSE ACCOMPLISHMENTS****EXPENDITURES****REMEDIAL INVESTIGATION****Private -Unknown**

On August 24, 1993, the Michigan Department of Environmental Quality (MDEQ) received a copy of a remedial investigation report completed for MDOT and the Rieth-Riley Construction Company. The Phase One hydrogeological investigation consisted of installation of four monitoring wells and several soil borings. Groundwater flow direction was determined. The investigation detected TCE in the groundwater but did not define the plume.

**FUTURE RESPONSE NEEDS****PROJECTED COST****INTERIM RESPONSE****\$300,000**

Limited scoping and treatment or removal of the source is necessary to prevent further groundwater contamination.

**SPECIAL CONSIDERATIONS**

The groundwater is flowing toward a residential area that does not have municipal water available.

**FUNDING HISTORY**

No state funds have been appropriated for or expended at this site.

**FY00 PROPOSED ACTION**

Three hundred thousand dollars (\$300,000) are requested to conduct a limited scoping and source remediation.

## SITE SUMMARY

### Site Name

Marathon Otter Lake Oil Field  
Forest Township, Genesee County  
Marathon Township, Lapeer County

County: Genesee and Lapeer

MDEQ District: Shiawassee/GSD

Site ID #: 440171

MAIN Project #: 452325

Site Score: 22

### LOCATION

The Marathon Otter Lake Oil Field covers several sections of Forest Township in Genesee County and Marathon Township in Lapeer County. Land use in the area is residential and agricultural.

### SITE HISTORY

This site consists of 55 oil and gas wells with associated tank batteries, production equipment, and flow lines. Enforcement actions began in the field in 1974 as a result of numerous spills of crude oil and brine. The wells are currently shut in and several have been improperly abandoned. Corrosion and deterioration of equipment at the abandoned facilities increase the risk of further contamination to the environment and pose a public health threat due to the potential for the release of deadly hydrogen sulfide gas.

In 1994 an investigation done by a new operator taking over eight wells and three tank batteries in the field, under a covenant not to sue, found soils highly contaminated with crude oil and brine. Chloride concentrations were found in the groundwater as high as 20 times the generic residential cleanup criteria. It is expected that similar findings will be made with the investigation of the remaining sites. A remedial investigation of nine of the high priority tank batteries was completed in 1997. A feasibility study of soil remediation alternatives was also completed.

### SITE STATUS

Phase I plugging and abandoning of 14 wells and associated tank batteries has been completed. Phase II plugging and abandonment of 20 wells and associated tank batteries is currently underway. To date, 4 of the 20 wells have been plugged.

### ENFORCEMENT STATUS

Enforcement measures have generally been unsuccessful towards initiating cleanup actions by the liable parties. One operator is under a court order from a private lawsuit to plug one well and remediate contamination at two tank batteries.

### RESPONSE ACCOMPLISHMENTS

### EXPENDITURES

#### INTERIM RESPONSE

**\$593,000**

Under an emergency action, 62 actively leaking tanks and treated vessels were drained of fluid. Approximately 518 barrels (42 gallons per barrel) of brine were disposed, and 1,236 barrels of crude oil were recovered and sold. Twenty-one thousand five hundred sixty-three dollars (\$21,563) from the sale are being held in escrow. Distribution of this money is being held for future cleanup activities. Fourteen wells were plugged and properly abandoned, and leaking tanks and equipment at 12 tank batteries are being removed.

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**INTERIM RESPONSE (cont'd)****private funds -- \$188,000**

A new operator, acting under a covenant not to sue, emptied and removed leaking tanks and equipment, and performed limited soil and groundwater investigation at three tank batteries.

**REMEDIAL INVESTIGATION****\$450,000**

Remedial investigation was conducted at nine of the high priority tank batteries. This included a feasibility study evaluating soil remediation alternatives at four sites.

**FUTURE RESPONSE NEEDS****PROJECTED COST****INTERIM RESPONSE****\$800,000**

Funding is needed to plug the 21 remaining wells in the field and remove tanks and other equipment. In addition, funding is needed to remove up to 100 cubic yards of contaminated soil around wellheads and tank batteries.

**\$75,000**

There is a need to conduct a limited remedial investigation to determine the extent of benzene, toluene, ethylbenzene, and xylene (BTEX) soil contamination remaining in the field.

**REMEDIAL ACTION****\$800,000**

Funding is needed to remediate any remaining soils at all well and tank battery sites.

**SPECIAL CONSIDERATIONS**

The greatest danger at this site is the potential release of lethal concentrations of hydrogen sulfide gas due to the deterioration of the abandoned facilities. Leaking brine and crude oil from the deteriorating facilities will also continue to contaminate soil and groundwater.

**FUNDING HISTORY**

General Fund Authorizations			Bond Fund Appropriations						
YEAR	ACTION	AMOUNT	YEAR	ACTION	AMOUNT	ACTION	AMOUNT	ACTION	AMOUNT
			1994	IR	\$0 <sup>t</sup>	RI	\$0 <sup>t1</sup>		
			1995	RD	\$100,000	IR	\$300,000 <sup>t2</sup>		
			1998	IR	\$800,000				

**FY00 PROPOSED ACTION**

Seven hundred and fifty six dollars (\$756,000) along with an internal transfer of funds are needed to continue plugging and properly abandoning remaining wells in the Marathon Otter Lake Oil Field is requested. Funding for conducting a limited remedial investigation to determine the extent of BTEX soil contamination remaining in the field is also requested.

<sup>t</sup> \$293,000 were transferred to this activity from another bond site.

<sup>t1</sup> \$453,700 were transferred to this activity from another bond site.

<sup>t2</sup> \$247,000 were transferred to this activity from another bond site.



## SITE SUMMARY

### Site Name

Grossman Ideal Steel  
10800 Hamburg Rd  
Hamburg, Michigan 48139

County: Livingston

MDEQ District: Shiawassee

Site ID #: 470012

MAIN Project #: 454139

Site Score: 33

### LOCATION

This 4.9-acre facility is west of Hamburg, south of a service drive, and runs parallel to Ann Arbor railroad tracks. A tributary to the Huron River is about 300 feet north of the site. Gravel pits are in the area and local drinking water is supplied by wells. The facility is adjacent to residential properties.

### SITE HISTORY

Since 1985, the Michigan Department of Natural Resources (MDNR) has cited the facility for non-compliance of federal waste management regulations. The owner-operator of the property has stored over 100 fifty-five gallon drums or five-gallon pails of paint related materials and polychlorinated biphenyl (PCB) contaminated transformers. MDNR staff observed spills to the ground from the storage of these items. From 1985 sampling, the MDNR showed transformer PCB Arochlor oils to be 99,999 parts per million (ppm) for AR 1242; 40,000 ppm for AR 1254 and 13,000 ppm for AR 1260. Hazardous substances in the drums and pails included methylene chloride, trichloroethylene (TCE), and various oils and resins.

In 1985, the liable party removed 17 cubic yards of PCB contaminated soils and reported that the PCB transformers were removed. In 1990, a United States Environmental Protection Agency (USEPA) site screening inspection detected soil and sediment contaminants of lead at 550 ppm and arsenic at 53 ppm. The USEPA also detected polynuclear aromatics and volatile organic compounds (VOCs) such as methyl ethyl ketone (MEK), toluene and 1,1,1 trichloroethane (TCA).

In 1997, Ideal Steel, a tenant operating on the property, analyzed a slag pile and found soils contaminated with lead above direct contact criteria at 628 ppm, copper at 220 ppm and chromium at 112 ppm. Ideal Steel subsequently removed three cubic yards of dried paint sludge and one 55-gallon drum of welding slag. Ideal Steel moved off the property in 1997 and the facility is presently being leased to a concrete form company.

### SITE STATUS

The owner and former operator of the facility abandoned at least 24 paint drums on the property in 1994. The owner has recently removed the drums from the premises and transported them to Windsor, Canada for re-mixing by a paint company. The moved drums are presently undergoing testing to determine if they are a waste product.

In October 1998, Michigan Department of Environmental Quality (MDEQ) staff, reacting to recently observed drum storage practices and the potential for enforcement actions by Waste Management Division (WMD), collected two paint sludge samples and two surface soil samples. Lead was found in a soil sample at 575 ppm, which is above direct contact criteria, and PCBs were found in one of the two soil samples at 3.8 ppm, which is above indoor and ambient air criteria. No significant remedial investigation has occurred to evaluate the extent of soil contamination or to determine if the groundwater has been impacted.

November 1998

**ENFORCEMENT STATUS**

MDEQ - WMD has cited the property owner and former operator for abandonment of waste drums. The owner of the property claims that the material can be re-mixed and is a viable secondary product. There are no records to indicate how the PCB transformers were disposed. The liable owner-operator for this site has also been determined liable for abandoned drums at the Pic-Holding facility on Plymouth Road, Wayne County.

**FUTURE RESPONSE NEEDS****PROJECTED COST****REMEDIAL INVESTIGATION****\$120,000**

A remedial investigation to determine the extent of soil and groundwater contamination on the property and/or migrating off the property is needed. Additionally, a determination of source removal and treatment options is necessary if receptors are at risk. This will be a limited scope remedial investigation.

**SPECIAL CONSIDERATIONS**

The primary objective of the requested remedial investigation is to determine the magnitude of the problem from PCB contaminated transformers and spills from improperly stored drums and pails. The remedial investigation will be limited in scope if releases are found to be incidental. A limited geophysical investigation may be needed to determine if wastes are buried at the property. Horseshoe Creek, a tributary to the Huron River, is about 300 feet north of the facility. No groundwater investigation has been completed and the threat to drinking water supplies is unknown.

**FUNDING HISTORY**

No state funds have been appropriated or expended at this site.

**FY00 PROPOSED ACTION**

One hundred and twenty thousand dollars (\$120,000) are requested to perform a remedial investigation to determine if historical releases significantly impacted site soils and groundwater. If soils and groundwater are significantly impacted, then an evaluation will be conducted to determine if further actions are necessary. The expected scope of work will include site history, source evaluation, soil borings, groundwater samples and installation of monitoring wells.

## SITE SUMMARY

### Site Name

Superior Polishing  
1949 Ten Mile Road  
Warren, Michigan 48091

County: Macomb

MDEQ District: Southeast Michigan

Site ID #: 500612

MAIN Project #: 454171

Site Score: 41

### LOCATION

The site is located in a commercial setting near the major intersection of 10 Mile Road and Dequindre Road. Kenney Avenue borders the site to the north, Ten Mile Road to the south, a liquor store to the west and a utility supply center to the east. A catch basin adjacent to the property discharges to Bear Creek.

### SITE HISTORY

Superior Polishing is the former location of a metal plating operation owned by William Forrester. On January 11, 1993, the property was sold to Milan Krstich, who used it for vehicle storage.

Several releases of plating solution have been reported at this site since November 1984. The releases were the result of plating solution seeping through the east concrete wall of the building. Analysis of the plating waste in puddles outside the building identified chromium at a concentration of 58,000 parts per million (ppm). Soil analysis identified chromium at 17,500 ppm. During the last recorded release on September 2, 1993, an unknown amount of chromatic acid, pH 2.1 with a chromium concentration of 58,000 ppm, impacted soils and entered into the catch basin which discharged into Bear Creek.

During the summer of 1994, the United States Environmental Protection Agency (USEPA) funded demolition of the building, excavated contaminated soil to a depth of approximately four feet, backfilled the excavation, covered the site with gravel and placed an eight foot chain link metal fence around the site. During soil excavation along the east foundation, visible chromium contamination extended to the water table. The groundwater seeping into the excavation was visibly discolored (bright yellow) and analytical testing indicated that it contained toxic characteristic leaching procedures (TCLP) chromium at 520 ppm. Excavated soil contained TCLP chromium at 190 ppm.

### SITE STATUS

The site is currently owned by Milan Krstich who also owns a nearby truck axle and frame shop. Currently the fenced lot is covered with gravel and is used by the owner to store a number of vehicles. Due to budgetary constraints, the USEPA cancelled the excavation with contaminated materials still on the property. Extensive groundwater and soil contamination remains on site.

**ENFORCEMENT STATUS**

On March 26, 1992, pursuant to the amended Michigan Environmental Response Act (MERA) PA 307 of 1982, the Michigan Department of Natural Resources (MDNR) sent a potentially liable party (PLP) letter to William Forrester. A second PLP letter was sent to Mr. Forrester on October 20, 1993, due to non-compliance. The PLP has performed no remedial activities.

**RESPONSE ACCOMPLISHMENTS****EXPENDITURES****INTERIM RESPONSE****federal funds-- \$414,919**

In 1994, the USEPA conducted a time critical removal action that involved disposal of plating waste, building demolition, soil excavation, backfilling excavation, covering the site with gravel and installing a fence around the site.

**FUTURE RESPONSE NEEDS****PROJECTED COST****INTERIM RESPONSE****\$800,000**

Funds are needed to perform an investigation and feasibility study, propose a remedy and design and implement a remedy.

**OPERATION AND MAINTENANCE****\$500,000**

Funds are needed for operation and maintenance (OM) of a remedy once constructed.

**FUNDING HISTORY**

No state funds have been appropriated or expended for this site.

**FY00 PROPOSED ACTION**

Six hundred and eighty-one thousand dollars (\$681,000) are requested to perform an investigation and feasibility study, propose a remedy and design and construct the proposed remedy. In addition, \$119,000 are requested to be transferred from savings from other sites to conduct these actions.

\*Note\* As of October 1995, the cleanup program responsibilities were transferred from the MDNR to the Michigan Department of Environmental Quality.

## SITE SUMMARY

### Site Name

Rub-A-Dub Cleaners  
35350 Twenty-three Mile Road  
New Baltimore, Michigan 48047

County: Macomb

MDEQ District: Southeast Michigan

Site ID #: 500698

MAIN Project #: 454810

Site Score: 34

### LOCATION

The property is 1.75 acres located on 23 Mile Road and Jefferson Avenue, approximately one-eighth of a mile north of Lake St. Clair. The area surrounding the site is a mixture of residential homes and commercial/retail businesses. The north edge of the site is adjacent to 23 Mile Road, beyond which is the New Baltimore Post Office, a residential home, a Pizza Hut Restaurant, an auto parts/service center, and a Lumberjack Home Center. To the immediate east is a small undeveloped parcel of land, beyond which is Jefferson Avenue. Residential homes are located East of Jefferson Avenue. The south boundary of the site is Jefferson Avenue. Adjacent to the west portion of the site is a shopping center with several businesses.

### SITE HISTORY

The site has been used since the 1950s as commercial property including a retail store, a car wash, and a dry cleaner. Dry cleaners historically used tetrachloroethylene (PCE) in their operations. PCE and several of its break down compounds including trichloroethylene (TCE), cis-1,2 dichloroethylene (DCE), trans 1,2-DCE, 1,1-DCE, and vinyl chloride exist in the groundwater. As indicated below, vinyl chloride is the contaminant of concern at this site.

Contaminant	Actual in parts per billion (ppb)	Depth (feet)	GSI (ppb)	Comm. II,III,IV Volatilization to Indoor Air (ppb)	Groundwater Contact (ppb)
Vinyl Chloride	67,000	4-5	15	690	290

### SITE STATUS

The owner of Rub-A-Dub Cleaners, Alex Dobovenko, sold this property to Rite-Aid. The Rite-Aid store, built on the site in 1997, covers approximately 15,000 square feet. Mr. Dobovenko also owns New Haven Laundromat, Inc. and has not performed any remedial work on the site.

### ENFORCEMENT STATUS

To date, no enforcement actions have been initiated.

### FUTURE RESPONSE NEEDS

### PROJECTED COST

#### INTERIM RESPONSE

**\$50,000**

Rose Lake will be requested to conduct an investigation. Funds will be needed to perform a feasibility study and propose a remedy.

#### REMEDIAL DESIGN AND CONSTRUCTION

**\$410,000**

Funds will be needed to design and construct a remedy.

**OPERATION AND MAINTENANCE**

**\$1,000,000**

Funds will be needed for operation and maintenance of a remedy once constructed.

**FUNDING HISTORY**

No funds have been appropriated or expended at this site.

**FY00 PROPOSED ACTION**

Fifty thousand dollars (\$50,000) are requested to perform a feasibility study and propose a remedy.

## SITE SUMMARY

### **Site Name**

Morton International Merkey 13  
(City of Manistee Wells No. 6 and 7)  
Tamarack Street  
Manistee, Michigan

**County:** Manistee

**MDEQ District:** Cadillac/DWRPD

**Site ID#:** 510147

**MAIN Project#:** 454910

**Site Score:** 18

### **LOCATION**

City wells No. 6 and No. 7 are located in Filer Charter Township on Tamarack Street, north of Merkey Road, east of Cherry Street, south of Twelfth Street and west of Maple Street. This is an undeveloped area near the Mt. Carmel Cemetery.

### **SITE HISTORY**

Chloride was detected in well No. 7 at 390 ppm during routine monitoring in May 1994. When drilled in 1964, chloride was detected at 15 ppm. Well No. 7 was taken off line in May 1994 and used only for standby purposes due to the chloride contamination.

While using well No. 6, which was drilled in 1964, the chloride concentrations began to increase from 2 ppm to 71 ppm in May 1994. In January 1999 the chloride concentrations had increased to 229 ppm. The city's two other wells, No. 8 and No. 9, are located in the same well field and have also shown increasing chlorides, but at lower concentrations.

Monthly monitoring has been conducted for several years to track chlorides due to known groundwater contamination in the vicinity. A wellhead protection delineation was completed in June 1996. A potential contamination site investigation was completed February 9, 1999 and detected a chloride plume with greater than 20,000 ppm chloride that is one-year from reaching the city wellfield.

The probable cause of this plume has not yet been confirmed, however several releases from brine piping have been documented in this area and there are brine extraction wells located in the vicinity. Historically, brine contamination was investigated in nearby Manistee Lake in 1936.

### **SITE STATUS**

Well No. 7 is used on standby status. Well No. 6 was inspected by the use of a down hole camera and the screen was cleaned on March 3, 1999 in order to draw water higher in the aquifer in an attempt to reduce chloride levels. This well must be returned to service to meet demand during summer months. All four wells will be sampled monthly for sodium, chloride, and coliform bacteria. The city is planning to construct one well this spring in a new wellfield located north of the city. To date, there has been no remedial action or clean up activities conducted at the site.

**ENFORCEMENT STATUS**

A meeting is scheduled for March 11, 1999 with Environmental Response Division, Drinking Water and Radiological Protection Division, the city of Manistee, and the potentially liable party (PLP).

**RESPONSE ACCOMPLISHMENTS**

No response actions have been taken at this time.

**FUTURE RESPONSE NEEDS****PROJECTED COST****ALTERNATE WATER****\$502,400**

Funds are being requested to conduct monitoring of the municipal water wells until a permanent solution is in place. There may be a need of \$500,000 for the 1/3 – 2/3 match to complete the construction of a municipal water production well, if the potential liable party does not assist the city.

**FUNDING HISTORY**

No state funds have been appropriated for or expended at this site.

**FY00 PROPOSED ACTION**

Two thousand four hundred dollars (\$2,400) will be transferred into the new appropriation in order to conduct monitoring of the municipal water supply wells until the new water supply well is in operation.

\*Note\* As of October 1995, the cleanup program responsibilities were transferred from the Michigan Department of Natural Resources (MDNR) to the Michigan Department of Environmental Quality (MDEQ). As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) for water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ.



## SITE SUMMARY

### **Site Name**

Zieman Grames Rds Dump Site Area  
12350 Zieman Road, SE Corner  
Milan, Michigan 48152

**County:** Monroe

**MDEQ District:** Jackson

**Site ID #:** 580024

**MAIN Project #:** 454112

**Site Score:** 31

### **LOCATION**

The Zieman Grames site is a former 117-acre farm previously used as an illegal dumpsite. The site is located at 12350 Zieman Road, Section 14, London Township, Monroe County. The site is southeast of Milan and is bordered by Zieman Road to the west, the Amos-Palmer Drain to the south, and private farm property to the north and east. The site lies approximately one-half mile south of Grames Road.

### **SITE HISTORY**

The site is an illegal dump/landfill discovered by the Michigan Department of Natural Resources (MDNR) per an anonymous complainant. Since 1950 the property owner, now deceased, had buried over 2,000 drums of paint waste, solvents, and oil sludges on four acres of his 117-acre farm. In November of 1984, an MDNR inspection revealed drums containing unknown solid and liquid waste, used tires, oil stains, fire marks and various other junk materials on the ground surface. Other buried, and partially buried, drums were found within and along the banks of the intermittent flowing Amos-Palmer Drain, which flows eastward into Stoney Creek and then to Lake Erie. Shallow excavations near these drums revealed groundwater with a dark brown color and strong paint solvent odor. Soil samples taken at that time found heavy metals and polychlorinated biphenyls (PCBs) in the soil above health based standards for protection of groundwater and direct human contact. The groundwater samples from shallow holes showed heavy metal contamination and high concentrations of volatile organic compounds (VOCs).

In 1988 the United States Environmental Protection Agency (USEPA) was asked to perform a time-critical emergency removal of drums of waste from the property. In 1989 the USEPA completed the removal of drums, but did not address the soil, groundwater and potential surface water contamination at the site.

### **SITE STATUS**

Phase I and Phase II of a remedial investigation have been completed. The USEPA installed a cut-off trench to contain the contaminated groundwater seeping from the banks into the Amos-Palmer Drain. The contractor was maintaining and pumping the trench as needed. This pumping has now been discontinued. A feasibility study for the site, comparing the generic industrial criteria to the site criteria, was completed in January 1998. Industrial criteria is inconsistent with the site zoning and land use.

If additional actions are not conducted, contaminated soils may leach into the groundwater and contaminate the source of drinking water for area residents. In addition, the threat of human exposure to the soil will continue to exist.

### **ENFORCEMENT STATUS**

The USEPA identified several potentially liable parties (PLPs) and the Michigan Department of Environmental Quality (MDEQ) sent notification letters to the PLP's. No parties were identified which were able to reimburse the State for costs incurred or conduct additional cleanup activities.

November 1998

**RESPONSE ACCOMPLISHMENTS****COST****INTERIM RESPONSE****federal funds - \$400,000**

Between 1988 and 1990, the USEPA removed 2,167 drums containing paint waste, solvents, and oil sludges; 250 tons of contaminated soil and 7,000 gallons of contaminated water. A fence was erected around the four-acre area where the drums were buried and a cut-off trench was constructed.

**REMEDIAL INVESTIGATION/FEASIBILITY STUDY****\$500,000**

Phase I found heavy metals, PCB's and lead in the surface soils above the value protective for direct human contact. Subsurface soils were contaminated with heavy metals and VOCs above the value in soil protective of drinking water supplies.

Phase II evaluated the nature and extent of environmental impact to soil, sediment, and groundwater surface water. The purpose of Phase II was to identify the types and maximum concentrations of the contaminants of concern and the location and nature of potential source areas. In addition, hydraulic conditions associated with the Amos-Palmer Drain were evaluated and a database, upon which subsequent remedial actions can be based, was provided. This phase included installation of 19 soil borings and seven groundwater monitoring wells and collection of surface water and surface water sediment samples. The report indicates the presence of metals, VOCs; semi-VOCs and PCBs in the soils; VOCs and semi-VOCs in the groundwater and metals in the sediments. No surface water samples contained metals above the criteria, therefore metals in sediments do not appear to be leaching. The surface water contained small amounts of VOCs indicating that the groundwater contamination may be impacting surface water quality. The draft report is under departmental review.

The feasibility study recommended removal of several "hot spots" of metals contamination. To control the continued migration of the VOCs into surface water, the study recommended capping, creating a slurry wall and long-term monitoring.

**FUTURE RESPONSE NEEDS****PROJECTED COST****INTRIM RESPONSE****\$1,050,000**

The criteria used for the initial feasibility study (FS) is not be applicable to the site, therefore a site-specific FS is needed to appropriately characterize the risk posed by site contaminants and will define the focus of the needed remedial actions. Funding is also needed to conduct the remedial action. This will likely involve soil removal and remedial actions pertaining to the groundwater.

**FUNDING HISTORY**

General Fund Authorizations			Bond Fund Appropriations						
YEAR	ACTION	AMOUNT	YEAR	ACTION	AMOUNT	ACTION	AMOUNT	ACTION	AMOUNT
			1993	RI	\$500,000 <sup>11</sup>				
			1996	IR	\$0				

**FY00 PROPOSED ACTION**

Eight hundred and eighty-one thousand dollars (\$881,000) are requested to perform a site-specific FS and actions needed for soil and groundwater remediation. In addition, \$169,000 are requested to be transferred from savings from other sites to perform these actions.

\*Note\* As of October 1995, the cleanup program responsibilities were transferred from the MDNR to the MDEQ. As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) for water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ.

<sup>t1</sup> \$100,000 were transferred to this activity from another site.

## SITE SUMMARY

### Site Name

Good & Good/Deerfield/Monroe  
Sec. 19 & 30 Dundee Twp. and  
Sec. 31 Summerfield Twp.  
Monroe County, Michigan

**County:** Monroe

**MDEQ District:** Jackson/GSD

**Site ID #:** 580172

**MAIN Project #:**

**Site Score:** 23

### LOCATION

There are a total of seven wells owned by the Good & Good Drilling Company in the Deerfield Field, Monroe County: Roy & Elda Roe G-1, PN 21270; R & G Roe #1, PN 5361; Henry Montry #5, PN 9257; H. Montry #1, PN 7174; H. Montry #4, PN 8569; Amelia Duval #1, PN 6965; and Halberstadt #A-1, PN BD#69.

### SITE HISTORY

Good & Good Drilling Company owns, and is otherwise responsible under law for, the above-mentioned seven wells. The Roy & Elda Roe #G-1 (PN21270), issued to the Dulong Oil Company on November 18, 1958, was transferred to the Good & Good Drilling Company on November 23, 1960. The other six wells were all transferred to the Good & Good Drilling Company on October 25, 1961, by various owners. On August 4, 1997, a Notice of Non-Compliance was sent to the Good & Good Drilling Company. The notice cited these wells for failure to plug or produce for over a year, abandoning some wells without proper plugging, failure to obtain plugging instructions, failure to file plugging records, failure to delineate contaminated soils and groundwater from spills, and failure to initiate cleanup. There was no verbal commitment to comply, nor was a written proposed compliance schedule received from the Good & Good Drilling Company. On November 13, 1997, the Good & Good Drilling Company was provided an informal opportunity to demonstrate compliance with Part 615, Supervisor of Wells, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). The meeting chairperson determined, based on information presented, that the Good & Good Drilling Company was not in compliance. On December 2, 1997, Assistant Supervisor of Wells notified the Good & Good Drilling Company that they were not in compliance with Part 615 of the NREPA and its rules and that any permit application filed by the Good & Good Drilling Company would be returned. The seven wells located in Monroe County can be identified as a site of, or source for, environmental contamination. Investigation conducted at the well sites found visual contamination of crude oil and asphaltic soils. Samples taken indicate total petroleum hydrocarbons in the soils above 10,000 parts per million (ppm). Corrosion and deterioration of equipment at the improperly abandoned facilities increase the risk of further contamination to the environment and pose a public health threat due to the potential for the release of additional contamination.

### SITE STATUS

Currently, the Good & Good Drilling Company has abandoned operations on all seven wells in the Deerfield Field. Contamination throughout the seven wells has not been remediated. Flowlines, vessels containing fluids, and the unplugged or improperly plugged wells continue to be possible sources for further contamination. Recent analysis of soils collected indicate levels of contamination for benzene, toluene, ethylbenzene, and xylenes are above current residential cleanup criteria. Landowners want the wells plugged and the sites restored to original condition.

**ENFORCEMENT STATUS**

The Geological Survey Division is continuing enforcement action against the Good & Good Drilling Company to plug and clean up the seven abandoned wells. To date, enforcement measures toward initiating cleanup actions by the responsible party, the Good & Good Drilling Company, have been unsuccessful.

**FUTURE RESPONSE NEEDS****PROJECTED COST****INTERIM RESPONSE****\$560,000**

In order to begin the restoration of the site, the seven wells will need to be abandoned, and oily soils and fluids will need to be removed.

**FUNDING HISTORY**

No state funds have been appropriated or expended at this site.

**FY00 PROPOSED ACTION**

Four hundred forty one thousand dollars (\$441,000) are requested to perform the interim response that includes properly abandoning the seven wells, removing oily soils and fluids, and restoring the site. In addition, \$119,000 are requested to be transferred from savings at other sites.

## SITE SUMMARY

### Site Name

Muskegon River Drum Dump  
BR31 and Getty Street  
Muskegon, Michigan

County: Muskegon

MDEQ District: Grand Rapids

Site ID #: 610358

MAIN Project #: 455235

Site Score: 21

### LOCATION

The site is located on the north side of BR31, approximately 100 feet east of the Getty Street intersection, and between BR31 and the South Branch of the Muskegon River.

### SITE HISTORY

In 1995, a complaint was received concerning drums found along the banks of the Muskegon River. The complaint was substantiated and one of the drums on the surface that contained a liquid hazardous waste was removed utilizing state funds. The origin of the drums is unknown. The City of Muskegon owns the property but denies dumping any waste or drums at that location.

### SITE STATUS

Numerous 55-gallon drums containing solids are located on the banks of the Muskegon River. In addition, numerous drums with unknown contents are buried throughout the area. Because of the unknown contents of the drums, the unsecured location, and the proximity to the Muskegon River, risks both to human health and the environment are posed.

### ENFORCEMENT STATUS

The present owners of the property (City of Muskegon) have denied placing any drums or any other waste at this location. To date, other responsible parties have not been identified.

### FUTURE RESPONSE NEEDS

### PROJECTED COST

#### INTERIM RESPONSE

**\$500,000**

Funds are needed to locate the drums and analyze the contents, properly dispose of the drums and perform an assessment of remaining soils and groundwater to determine the extent of risk to human health and the environment.

### FUNDING HISTORY

No state funds have been appropriated for or expended at this site, other than emergency funds to remove hazardous waste.

### FY00 PROPOSED ACTION

Three hundred and eighty-one thousand dollars (\$381,000) are requested to remove the drums and associated contaminated soil and to delineate the extent of soil and groundwater contamination. In addition, \$119,000 are requested to be transferred from savings from other sites to conduct these actions.

## SITE SUMMARY

### Site Name

Waterford Hills Sanitary LF  
7900 Gale Road  
Waterford, Michigan 48237

County: Oakland

MDEQ District: Southeast Michigan/WMD

Site ID #: 630165

Main Project #: 453978

Site Score: 33

### LOCATION

Waterford Hills Sanitary Landfill is a 28-acre landfill located within a 55-acre parcel of land. The Pontiac Lake State Recreation Area surrounds the landfill. Residential properties are located 1,000 feet north and 2,000 feet east of the landfill. Maceday Lake is about one half mile east of the site.

### SITE HISTORY

Prior to 1981, the landfill property was used for sand and gravel mining operations. The Michigan Department of Natural Resources (MDNR) licensed the facility as a Type II landfill and the site began receiving waste in 1981. The liner system was constructed with 30 ml PVC and a leachate collection system connected to the local sewer system. The facility continued to receive waste until October 1990, at which time a Cease and Desist Order was issued by the MDNR. The order was issued in part as a result of the detection of volatile organic compounds (VOCs) in groundwater samples obtained from monitoring wells at the site between 1988 and 1990. The cause of groundwater contamination was due to a failure of the liner in the original 28-acre landfill area (cells one to six) resulting in discharge of leachate from the base of those cells. Groundwater flow from the site is east and northeast, carrying contaminants to Maceday Lake and the recreation area.

The following VOCs were detected in the portion of the upper aquifer between the landfill and Maceday Lake in 1995: benzene, vinyl chloride, trichloroethylene, tetrachloroethylene, 1,1-dichloroethylene, *cis*-1,2 dichloroethene, *trans*-1,2 dichloroethene, methylene chloride, 1,1-dichloroethane, 1,1,1-trichloroethane, 1,2 dichloroethane, dichlorodifluoromethane, trichlorofluoromethane, toluene, chloroethane, diethyl ether, methyl *tertiary* butyl ether, 1,2,3 trichlorobenzene, 1,2,4 trichlorobenzene, 1,2 dibromo-3-chloropropane, acetone and 2-butanone. Phenol was also detected. Monitoring data from 1995 indicated two zones of contamination above the residential drinking water standards. One zone extended about 300 feet north of the landfill and the other extended about 800 feet east of the landfill. The following parameters and ranges of detection were identified above the residential drinking water criteria: benzene 6.3 to 14 parts per billion (ppb); methylene chloride 15 ppb; trichloroethylene 7.7 ppb and vinyl chloride 2.3 ppb to 47 ppb. Monitoring data through April 1997, indicate similar results but some lateral migration of contaminants to the north. The Drinking Water and Radiological Protection Division (DWRPD) monitoring of residential wells indicated a residential well southeast of the landfill with a trace amount of methylene chloride. No VOC contaminants have been detected in residential wells since that date.

### SITE STATUS

Prior to the cap repairs, the existing leachate collection system was repaired. The zone of contamination east of the landfill reduced in size from February 1995 to September 1995. In December 1996, a 4.8-acre cell was constructed with state funds to complete the capping and closure work at the facility. The cap will act to reduce the production of leachate and reduce or eliminate the discharge of leachate from the landfill.

November 1998

As of October 1996, the zones of groundwater contamination above residential criteria existed along the east, north, and west sides of the landfill. As of April 1998 groundwater contamination above residential criteria did not extend to the zone of compliance wells east of the landfill. Groundwater contamination below the residential criteria continued to discharge to Maceday Lake in April 1998, but none of the contaminants were detected in the lake. Fourteen residential wells, contaminated by the landfill, were abandoned and the residents connected to the Waterford Township water supply, with the exception of the one well with a trace of methylene chloride. Some residential wells still exist in the area of contamination, but have not tested positive for contaminants. As of April 1998, groundwater-monitoring data reveal that, in general, the contaminant compounds and concentrations detected in the wells associated with the site remain fairly consistent. As a result continued monitoring is recommended.

The gas collection system of the facility has not been in operation since the summer of 1997 due to condensate collection in the piping system and subsidence of the system. Efforts to reactivate the system, including videotaping and cleaning, were not successful. A work plan is being reviewed by the Michigan Department of Environmental Quality (MDEQ) for investigation and remediation to bring the system back into operation.

### **ENFORCEMENT STATUS**

A Cease and Desist Order was issued at this site in October 1990. The site is currently in litigation in Oakland County Circuit Court regarding remediation and final closure activities. As part of the litigation, the MDEQ is pursuing cost recovery of state funds that were expended at the site and funds expected to be spent at the site.

At a hearing on May 6, 1998, final judgments were entered with John and Robert Runco, who each paid \$110,000 to the state and \$25,000 to Waterford Township. The state has also collected just under \$1,000,000 from third-party defendants in this case, making the total amount recovered by the state \$1,195,000.

A final judgment was also entered against Oakland Disposal, Inc. and Oakland Disposal No. One on May 6, 1998, in the amount of \$14 million in favor of the state and \$300,000 in favor of Waterford Township. The state and township have yet to collect the judgments against the corporate defendants. As a part of the final judgments, defendants Best Way Recycling No. 1, Special Waste Systems, Inc., and Runco Land Company were dismissed with prejudice and without costs.

Additionally, at a hearing on February 11, 1998, the court granted the state's motion to enter default judgments against defendants Gene Hirs, Jim King, and Waterford Sanitary Landfill, all past owners/operators of the landfill. These defendants failed to appear at trial on June 23, 1997, or otherwise defend in this action. The default judgments against these defendants, who are jointly and severally liable for response costs expended by the state, were granted in the amount of \$16,034,457.81. Defendant Gene Hirs filed a notice of appeal on May 8, 1998 and an appeal brief on September 10, 1998. This matter is currently pending before the Court of Appeals.

### **RESPONSE ACCOMPLISHMENTS**

### **EXPENDITURES**

#### **REMEDIAL INVESTIGATION**

**\$500,000**

The remedial investigation was conducted and the feasibility study was finalized.



**REMEDIAL ACTION****\$11,415,054**

From 1991 to 1994, the MDNR used site bond funds and state bond emergency funds to conduct site maintenance and leachate control. The Michigan Department of Public Health (MDPH) utilized bond funds to provide bottled water to residents with contaminated wells and to connect some of the residents to the township water supply. From 1994 to 1996 cell eight was constructed, some waste was moved from cells one through six to cell eight and the cap was installed with a gas collection system and flare.

**FUTURE RESPONSE NEEDS****OPERATION AND MAINTENANCE****\$410,000**

The landfill gas collection and flaring system has been inoperative since 1997 because of sagging gas lines and condensate in the lines. As a result, gas is freely migrating from the landfill, resulting in an odor problem. In September 1998, odor complaints from local residents increased. A preliminary construction estimate to remediate the landfill gas collection and flaring system is \$75,000 to \$150,000. Funds are also needed to implement institutional controls involving groundwater monitoring and for imposition of a restrictive covenant or a local ordinance restricting use of the aquifer of concern between the landfill and a compliance line of wells for five years. Also, these funds will be used for the operation and maintenance of the gas flare system; maintenance of the landfill cap, sedimentation ponds, landfill ditches, access roads, and leachate collection system; and for consulting fees.

**FUNDING HISTORY**

General Fund Authorizations			Bond Fund Appropriations						
Year	Action	Amount	Year	Action	Amount	Action	Amount	Action	Amount
1991	RI	\$50,000	1993	RI	\$0 <sup>t1</sup>	RA	\$0 <sup>t2</sup>		
			1995	RA	\$4,000,000				
			1996	RA	\$0				
			1997	OM	\$600,000				

<sup>t1</sup> \$500,000 were transferred to this activity from another Bond site.

<sup>t2</sup> \$9,344,000 were transferred to this activity from another Bond site.

**FY00 PROPOSED ACTION**

Three hundred and Fifty Thousand Dollars (\$350,000) are requested to fund the operation and maintenance. These activities will include an investigation, remediation and start-up of the gas collection system. Other activities will include operation and maintenance of the facility, such as consulting fees, erosion control, sediment removal, seeding, leachate fees and operation and maintenance of the gas collection system. An additional \$60,000 is requested to be transferred from savings at other sites to complete these activities.

## SITE SUMMARY

### Site Name

Coe's Cleaners  
427 N. Main  
Milford, Michigan 48381

County: Oakland

MDEQ District: Southeast Michigan

Site ID #: 631005

MAIN Project #: 455179

Site Score: 31

### LOCATION

The site of the former Coe's Cleaner is located to the west of N. Main Street and south of Commerce Street in the Downtown Village Shopping Center of Milford. A mall, including several businesses, now exists at this location. The village of Milford's municipal water supply and the Huron River are located less than half a mile downgradient of this former dry cleaning operation.

### SITE HISTORY

Coe's Cleaner, a dry cleaning business, previously operated at this location. Dry cleaners historically used tetrachloroethylene (PCE) in their day-to-day operations. PCE can break down into the following compounds: trichloroethylene (TCE), cis 1,2-dichloroethylene (DCE), trans 1,2-DCE, 1,1-DCE, vinyl chloride, and chloroethane.

Groundwater in a well located directly downgradient of the former dry cleaner was analyzed for volatile organic compounds (VOCs). The following hazardous substances were detected: tetrachloroethylene (PCE) at 470 parts per billion (ppb); TCE at 30 ppb; DCE at 110 ppb. The residential drinking water criteria of five ppb are exceeded at this site for both PCE and TCE. This poses an acute public health problem.

The village of Milford has been detecting chlorinated hydrocarbons in its municipal water supply since the late 1980s. However, the concentrations of these hazardous substances have not exceeded generic residential criteria.

### SITE STATUS

Currently, the site is a mall and is occupied by the following: The Peony House Restaurant at 427 N. Main, Milford General Store at 423 N. Main, and After Image Hair Salon at 431 N. Milford.

In February 1997, Rose Lake installed one well approximately 90 feet southwest and downgradient of the dry cleaners. Based upon analytical testing of the groundwater and its proximity to the former dry cleaning operation, the site is a potential contributor/source to the contaminants detected in the village of Milford's municipal water supply.

### ENFORCEMENT STATUS

No enforcement has taken place, but an investigation is being conducted to determine a potentially liable party.

### FUTURE RESPONSE NEEDS

### PROJECTED COST

#### INTERIM RESPONSE

**\$690,000**

Funds are needed to conduct an investigation and feasibility study and design and implement a remedy.

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**OPERATION AND MAINTENANCE**

**\$1,000,000**

Funds will be needed for operation and maintenance of a remedy once constructed.

**FUNDING HISTORY**

No state funds have been appropriated or expended at this site.

**FY00 PROPOSED ACTION**

Four hundred and ten thousand dollars (\$410,000) are requested to perform an investigation and feasibility study, propose a remedy, and design and construct the selected remedy. In addition, \$280,000 are requested to be transferred from another site to conduct these actions.

## SITE SUMMARY

### Site Name

Rohen Landfill  
Northeast Quarter of Section 10,  
T17N-R8W, Evert Township

County: Osceola

MDEQ District: Cadillac

Site ID #: 670072

MAIN Project #: 454523

Site Score: 18

### LOCATION

Rohen Landfill is located approximately one mile southeast of the city of Evert, in the southeast quarter of the northeast quarter of Section 10, Evert Township. Located on South Dillman Road, this five-acre industrial landfill is situated within a quarter mile of private homes and within a half mile of a subdivision bordering Lake Lure.

### SITE HISTORY

This private property was operated as Rohen Enterprises for the disposal of industrial wastes generated by Evert Products. It was licensed from 1970 until 1977 under Act 87, Public Act of 1965. During the discovery of pending litigation involving the disposal of wastes generated by Evert Products, this site was identified as a major disposal area utilized by Evert Products prior to enactment of federal or state laws governing hazardous wastes. Staff inspections in 1995 confirmed the presence of Evert Products wastes at the surface of this property. Present landforms indicate the extent of the filled areas. In 1996, the Geological Services Section of the Environmental Response Division (ERD) conducted an investigation to assess the quality of groundwater leaving the site. This investigation revealed low levels of volatile organic compounds (VOCs) in the groundwater migrating north from the site.

### SITE STATUS

Some current disposal of white goods and demolition debris is evident. Groundwater has been determined to be moving in a northerly direction toward the private residential wells bordering Lake Lure. Michigan Department of Environmental Quality (MDEQ) has sampled individual water supply wells to identify any contaminants. Further residential well sampling will be conducted in the future. No levels above residential standards were found to be leaving the site, however, the extent of the plumes in the downgradient direction was not fully delineated. Municipal water is not available to these homes.

### ENFORCEMENT STATUS

To date, no enforcement actions have been initiated at this site.

### RESPONSE ACCOMPLISHMENTS

### EXPENDITURES

#### REMEDIAL INVESTIGATION

Unknown

ERD Geological Services Section conducted a hydrogeological evaluation of groundwater leaving the landfill property in 1996. The plume was not tracked to its leading edge to determine threats to potential receptors, nor evaluated to determine if concentrations exist within the plume that would create increased hazards.

**FUTURE RESPONSE NEEDS****PROJECTED COST****REMEDIAL INVESTIGATION****\$75,000**

Additional groundwater sampling is necessary to define the extent of contaminants migrating from the landfill area. Downgradient residential water supply wells are potential receptors.

**FUNDING HISTORY**

No state funds have been appropriated for or expended at this site.

**FY00 PROPOSED ACTION**

Seventy Five Thousand dollars (\$75,000) are requested to conduct a limited remedial investigation to further delineate areas of contamination which were identified during the 1996 groundwater investigation.

## SITE SUMMARY

### Site Name

Osceola Refinery (former)  
521 North Park Street  
Richmond Township

County: Osceola

MDEQ District: Cadillac

Site ID #: 670076

MAIN Project #: 454925

Site Score: 28

### LOCATION

The former Osceola Refinery is located near Reed City, in Grant's Addition, Richmond Township. It is north of the former east-west railroad tracks and west of Park Street. It once occupied part of the property now owned and managed by the Osceola Oil Company, 521 North Park Street. A few small businesses operate in the immediate area and several residences are located on or near the former refinery.

### SITE HISTORY

A crude oil refinery operated at this location from about 1942 through 1963. Several above ground tanks were located on the property. Osceola Oil Company removed leaking underground storage tanks (UST) in 1996. Monitoring wells installed in 1996 by the oil company, identified petroleum contamination. Water in some monitoring wells had a black color and a crude oil odor. In 1997 benzene was detected in one monitoring well at 340 parts per billion (ppb). The health based values in drinking water is five ppb. This well is located upgradient of the UST removal. Source areas are presumed to exist from the refinery operations.

### SITE STATUS

The Osceola Oil Company is addressing contamination from an UST release at this site. In October 1997, the Michigan Department of Environmental Quality (MDEQ) completed the last sampling of critical monitoring wells. The Drinking Water and Radiological Protection Division (DWRPD) is monitoring selected private wells.

### ENFORCEMENT STATUS

To date, no enforcement actions have been initiated.

### FUTURE RESPONSE NEEDS

### PROJECTED COST

#### REMEDIAL INVESTIGATION/FEASIBILITY STUDY

**\$ 250,000**

The extent of contamination needs to be investigated. The benzene levels of 340 ppb and the odor of the groundwater warrant further study.

### SPECIAL CONSIDERATIONS

The Hersey River, a designated trout stream, is approximately 1,000 feet east of this site. Groundwater flows through a residential area and towards the river. Several single-family homes reside on or near the former refinery property and are potential receptors of contaminated groundwater. Source areas may include processing areas, piping, storage tanks, and sludge pits that were often used at older refineries. The area has recently become attractive for redevelopment.

### FUNDING HISTORY

No state funds have been appropriated for or expended at this site.

**FY00 PROPOSED ACTION**

Two hundred fifty thousand dollars (\$250,000) are requested for remedial investigation/feasibility study to define the extent of contamination, which remains on, or may be migrating away, from this site.



## SITE SUMMARY

### **Site Name:**

Southwest Ottawa County Landfill  
2901 N. 160<sup>th</sup> Avenue  
Holland, Michigan

### **County:** Ottawa

**MDEQ District:** Grand Rapids/Superfund/DWRPD

**Site ID#:** 700024

**MAIN Project #:** 453470

**Site Score:** 26

## LOCATION

The site is located on 160th Avenue between James and Riley Streets in a mixed residential and agricultural area. Lake Michigan is approximately one-half mile west and Lake Macatawa is located approximately 1 1/2 miles to the south.

## SITE HISTORY

The 43-acre Southwest Ottawa County Landfill (SWOCL) operated as a state licensed landfill, until its closure in 1981. The landfill was constructed and operated by Ottawa County in 1968 and received solvents, heavy metals, sludge, oils, municipal refuse, and drums containing unspecified wastes. Major contaminants in the groundwater from a mixture of municipal and industrial waste in the landfill include: benzene, chlorobenzene, lead, antimony, aluminum, sodium, zinc, aldrin, manganese, cadmium, vanadium, beryllium, heptachlor, dieldrin, Endrin, and arochlor 1254. All of the above contaminants are above the state's generic residential criteria. The site was added to the National Priorities List (NPL) in September 1983.

The site may pose an acute public health problem due to contaminated groundwater breaking through the existing purge and treatment system and impacting residential wells. The groundwater contaminant plume also has the potential to cause an environmental problem if it discharges into Lake Michigan.

A groundwater investigation conducted in 1979 by the Board of County Road Commissioners, under the direction of the Michigan Department of Natural Resources (MDNR), indicated that the groundwater was contaminated with benzene, ethyl benzene, xylene, trichloroethylene, chlorobenzene, 1,1-dichloroethane, 1,2-dichloroethane, methylene chloride, and iron. A preliminary Feasibility Study (FS) for treating the groundwater was completed in 1980.

In 1981 a private drinking water well evaluation indicated some area residential wells were contaminated although the source of contamination was never completely identified.

Groundwater data received from an adjacent NPL site (Waste Management-Holland Lagoons located within the groundwater plume from SWOCL) indicates that the groundwater is contaminated with inorganics above Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, generic residential criteria. These contaminants are: aluminum, antimony, beryllium, cadmium, lead, manganese, vanadium, and zinc. An isolated area of pesticides above the Part 201 standards was also discovered.

In 1981, the state issued a Consent Order which required the county to close and cap the landfill and required potentially affected residential wells to be connected to the municipal water system. Private residences with potentially affected wells were connected to the city of Holland water supply.

In 1984, the MDNR signed a Groundwater Restoration Agreement with the Ottawa County Board of Commissioners which outlined a multi well groundwater extraction system to minimize risks to public health and the environment from use of and contact with contaminated groundwater and to prevent migration of contaminants to other residential wells and Lake Michigan. The treatment system began operation in August of 1987. In 1990-1992 additional purge wells and monitor wells were installed to close possible gaps in the purge system and to determine the effectiveness of the purge and treatment system. In 1993, an additional sand filter was installed to handle the increased iron loading. In 1994 additional monitoring wells were installed to further monitor the overall effectiveness of the system. All of the improvements to the purge and treatment system were done by the Ottawa County Road Commission.

#### **SITE STATUS**

The 43-acre landfill is owned by Ottawa County and managed by Ottawa County Road Commission. The site is currently capped and fenced. Ottawa County is a liable party both under Comprehensive Environmental Response, Compensation and Liability Act, 1980 PL 96-510, and Part 201, and is operating and maintaining the groundwater extraction and treatment system.

#### **ENFORCEMENT STATUS**

The state is proceeding with negotiations with Ottawa County to update the 1984 Groundwater Restoration Agreement in light of new state standards, the questionable effectiveness of the treatment system, and the newly found knowledge of additional contaminants in the groundwater not covered by the original agreement. The state will also seek to cover reimbursement of the state's future oversight costs.

#### **SPECIAL CONSIDERATIONS**

This site has been in the Operation and Maintenance phase since August 1987. Annual reviews of the groundwater treatment system as well as the EPA policy five-year reviews of the system result in recommended modifications and/or improvements to the system. These recommendations include additional data collection to assure that the remedy remains protective of public health and the environment.

#### **RESPONSE ACCOMPLISHMENTS**

##### **ALTERNATE WATER**

**\$160,070**

From 1996 until present, drinking water well monitoring: (Additional investigative drinking water well sample collection and analysis was done prior to 1996 at additional state and local health department expense.). A municipal extension and connection - for about 1,775 feet of municipal main, 11 residential connections to the municipal system, and 10 well abandonments in 1993. Additional municipal connections – 10 connections and 11 drinking abandonments are currently in progress and plan to be completed in 1999.

##### **BOTTLED WATER**

**\$1,920**

Bottled water was provided from 1991 until 1998 when a more permanent solution was determined:

##### **REMEDIAL INVESTIGATION/FEASIBILITY STUDY**

**PLP -- unknown**

In 1979 until 1981, an investigation of the source(s) of contamination was conducted by the liable party and the state. Hydrogeological information such as groundwater flow direction and area geology was determined in the study. Samples for water quality parameters were obtained which indicated groundwater contamination was emanating from the landfill area and from an adjacent former waste treatment operation. Interim

response measures included closing of the landfill with cover and installing landfill ventilation in compliance with the consent order.

**RECORD OF DECISION****Date Issued: 10/17/84**

A Groundwater Restoration Agreement was signed between the state and Ottawa County to implement a groundwater purge and treatment system to address contaminated groundwater. The agreement outlines specific technical data needed for design of a groundwater cleanup system and treatment standards for groundwater. Contaminants such as benzene, ethylbenzene, xylene, chlorobenzene and iron were specifically addressed with treatment standards in the agreement.

**REMEDIAL DESIGN****PLP – unknown**

From 1984 until 1986, the PLP determined design parameters for a groundwater extraction and treatment system. Aquifer analyses testing, system design, well construction plans and specifications were completed. An operations and maintenance plan and contingency plans were prepared and permits for surface water and air discharges were obtained.

**REMEDIAL ACTION****PLP -- unknown**

From 1986 until 1987, the PLP constructed a groundwater remediation system consisting of seven extraction wells using activated carbon adsorption for removal of volatile and halogenated organic compounds and a chemical oxidation and filtration for iron removal. Between 1990 and 1993, three additional extraction wells were installed and sand filtering was added for better iron treatment. Extensive groundwater monitoring was conducted to better determine aquifer conditions at the site.

**OPERATION AND MAINTENANCE****PLP -- \$200,000/year**

From 1987 to the present, the PLP has operated the groundwater remediation system. A system of ten wells extracts and treats approximately 1,000,000 gallons of groundwater per day.

**FUTURE RESPONSE NEEDS****Alternate Water – monitoring****\$28,000**

Monitoring of area residences is needed to provide public welfare and safety. Monitoring could take up to four or more years to ensure safety.

**Alternate Water watermain extension****\$163,000**

There are currently 25 residential wells in the monitoring program. If these were to become adversely impacted to action levels, the provision of alternate water would involve installation of an additional estimated 1,000 feet of 8 inch municipal water main plus other expenses.

**OPERATION AND MAINTENANCE (OM)****PRP -- Unknown**

In 1999, improvements will be made to the current remedy, therefore, future OM costs are not known at this time.

**FUNDING HISTORY**

Bond contingency funds were used to supply bottled water and well replacements. Otherwise, no state funds have been appropriated for this site.

**FY00 PROPOSED ACTION**

Six thousand dollars (\$6,000) will be transferred into the requested appropriation to continue monitoring at homes where a threat of contamination remains. The remaining funds will be made available from savings at sites.

\*Note\* As of October 1995, the cleanup program responsibilities were transferred from the Michigan Department of Natural Resources (MDNR) to the Michigan Department of Environmental Quality (MDEQ). As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) for water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ.

## SITE SUMMARY

### Site Name

Federal Ave. Bulk Plant (former)  
Federal Avenue  
Houghton Lake, Michigan

County: Roscommon

MDEQ District: Cadillac

Site ID #: 720090

MAIN Project #: 454981

Site Score: 28

### LOCATION

The Federal Ave. Bulk Plant site is located on Federal Avenue in a residential/ commercial setting of Houghton Lake, Roscommon County. It is zoned heavy commercial. The site is a vacant lot measuring 128 feet by 150 feet and is approximately one-half mile from Houghton Lake. It is adjacent to the Fuller Oil Bulk Plant site where state-funded response actions are being conducted.

### SITE HISTORY

As a result of groundwater investigations conducted at the Fuller Oil Bulk Plant site, two converging groundwater contaminant plumes were identified. In an attempt to identify the source of the second plume, Michigan Department of Environmental Quality (MDEQ) staff discovered that this site was once an operating bulk plant. This was confirmed with an aerial photograph from 1981 showing a bulk facility consisting of seven large aboveground tanks. The district has no documented releases on file for this site. The facility was dismantled in the early 1980s.

Six soil borings were completed in the former tank area during an investigation conducted in 1997. Soil contamination identified included ethylbenzene at 9,400 ug/kg, xylenes at 92,000 ug/kg, 1,2,4-trimethylbenzene at 82,000 ug/kg and 2-methylnaphthalene at 25,000 ug/kg. Additionally, a shallow and deep monitoring well was installed on the property downgradient of the soil boring locations. Groundwater contamination was identified as benzene at 23 ug/l, ethylbenzene at 90 ug/l, xylene at 680 ug/l and lead at 9 ug/l.

The plume that appears to be coming from the Federal Avenue Bulk Plant site commingles with the plume identified from the Fuller Oil Bulk Plant roughly 150 to 200 feet downgradient of the soil boring locations. The commingled plume has been delineated approximately 350 feet downgradient of this former bulk facility. The Drinking Water & Radiological Protection Division (DWRPD) is monitoring the residential wells located approximately a quarter mile downgradient of the commingled plumes. Area residents rely on domestic water supply wells for their drinking water.

### SITE STATUS

In October 1998 the Environmental Response Division's (ERD) Geological Services Section conducted additional remedial investigation activities to determine the extent of soil contamination at the site. If potentially liable parties (PLPs) refuse to take response actions, MDEQ will prepare bid specification documents to complete soil removal activities. The need for groundwater remediation is being determined as part of the Fuller Oil site investigation. A combined treatment system will be used, if needed. This site is privately owned and has redevelopment potential.

### ENFORCEMENT STATUS

A liability review is being conducted and PLPs under Part 201 will be notified of their responsibility to take response actions.

**RESPONSE ACCOMPLISHMENTS****EXPENDITURES****REMEDIAL INVESTIGATION****\$5,060**

Six soil borings and two monitoring wells were completed at this facility as part of the Fuller Oil Bulk Plant site work in 1997. In October 1998 ERD's Geological Services Section installed 30 geoprobe soil borings and collected 90 soil samples.

**FUTURE RESPONSE NEEDS****PROJECTED COST****INTERIM RESPONSE****\$150,000**

Interim response activities will be directed at source control and will include contaminated soil removal/disposal and verification sampling.

**FUNDING HISTORY**

No state funds have been appropriated for this site.

**FY00 PROPOSED ACTION**

One hundred fifty thousand dollars (\$150,000) are requested to remove contaminated soil and perform verification sampling.

## SITE SUMMARY

### Site Name

Dixie and Maple Roads Resident  
Birch Run, Michigan

County: Saginaw

MDEQ District: Saginaw Bay

Site ID #: 730433

MAIN Project #: 451219

Site Score: 25

### LOCATION

The site is located at Dixie and Maple Roads in Birch Run, Saginaw County.

### SITE HISTORY

The site was formerly used to store and distribute waste oil used for road oiling. The business, owned by Mr. Hitow, was known as Genesee Waste Oil Company or Saginaw Oil. Mr. Anthony Vozza purchased the property in the 1970s. He used the property for a period of time to store construction equipment. Mr. Vozza subdivided the property, sold some parcels and donated the rest of the property to the Sheridan Road Baptist Church.

Soil samples from at least two of the parcels on the facility indicated that polychlorinated biphenyls (PCBs) were present in levels that exceed the residential direct contact criteria.

### SITE STATUS

Further investigation is necessary to define the extent of contaminants at the site. Michigan Department of Environmental Quality staff will request geological services from Rose Lake.

### ENFORCEMENT STATUS

Letters regarding their section 7a, Due Care obligation under Part 201, were sent to the owners and land contract holders of the two parcels where contaminants were confirmed with analytical data.

### FUTURE RESPONSE NEEDS

### PROJECTED COSTS

#### INTERIM RESPONSE

**\$25,000**

Investigation activities will be requested from Rose Lake to define the full extent of contaminants at the facility.

### FUNDING HISTORY

No state funds have been appropriated or expended at this site.

### FY00 PROPOSED ACTION

Twenty-five thousand dollars (\$25,000) are requested to conduct the interim response activities.

## SITE SUMMARY

### Site Name

Huron Development Sanitary LF  
5384 Indian Trail  
Marine City, Michigan 48093

County: St. Clair

MDEQ District: Southeast Michigan/WMD

Site ID #: 740162

MAIN Project #: 454870

Site Score: 20

### LOCATION

The Huron Development Landfill is a 40-acre, Type II abandoned landfill, located at 5384 Indian Trail, Marine City, in part of the southeast quarter of Section 28, T04N, R16E, China Township, St. Clair County. Undeveloped land and a few residential dwellings surround the property.

### SITE HISTORY

The landfill was first licensed in 1977 for 40 acres. The facility consists of Area A (previously filled) which is 8.08 acres, Area B is 0.61 acres and Area C, previously filled, is 15.28 acres. The rest of the landfill consists of 'future fill areas'. Cells 56 and 57 cover 1.8 acres and have received waste. Cell F is an open cell located on 0.9 acres and was excavated for filling but was never licensed to receive waste. Area C has received some closure soil material, but the cover was never certified to meet the required standards for closure.

The Part 115 license was renewed for ten acres in 1984 and 1986. During February 1988, the operator, Halkias, sold the landfill to John L. and Robert M. Runco. Even though the company was sold, it continued to operate under the same name. The new operator was required by the Michigan Department of Natural Resources (MDNR) to obtain a new license. During 1988, a license application to operate ten acres of the landfill was denied. Operations continued after the denial of the license. Subsequently, the county issued a Cease and Desist order to the operator for operating without a license. In 1989, an operating license application was submitted and a license for 1.65 acres was issued to the operator in 1990. The facility was abandoned in 1991. The current property owner for the facility is Marine City.

### SITE STATUS

Marine City has stated in writing to the Michigan Department of Environmental Quality (MDEQ) that they do not have sufficient funds to properly close the facility. Upon a number of site inspections, MDEQ staff identified exposed waste around the landfill with surface water coming in contact with waste and generating leachate continuously. Such leachate is running off the landfill onto surrounding properties. The landfill relies upon a number of manholes installed in Area A, Cells 56 and 57, for the removal of leachate. Excess waste must be removed from Area A, Cells 56 and 57, and placed into Cell F. Also, the Area A, Cells 56 and 57, should be graded and sloped and a two-foot cover applied to the area. Cell F is open and filled with surface water, which is in contact with waste on the north side of the cell. This water must be tested and properly disposed. A leachate sump must be constructed in Cell F. Area C should also be graded and sloped and a six-inch cover applied.

MDEQ staff has also identified several actions that need to take place in order to control and restore the site. These activities include seeding, mulching and fertilizing all areas; applying aggregate on the road surface to stabilize the road for access to the landfill; applying plain Rip-Rap around the landfill to control surface water runoff and erosion; constructing (or grading and sloping as necessary) surface water ditches around the facility; installing a fence and a front gate to control access to the facility; and pumping and hauling leachate from the landfill.



Before MDEQ can start pumping and hauling leachate a road will need to be constructed to the back of the landfill in order to allow access to the leachate sumps. The MDEQ requested that Marine City construct this road, but city officials indicated that they do not have the resources to do so. The MDEQ will need to develop and secure a contract for road construction work in order to gain access to all parts of the site.

### ENFORCEMENT STATUS

Nick Halkius Refuse Inc. operated the landfill when it ceased operations in 1991. The company filed bankruptcy and abandoned the landfill. Currently, Marine City owns the site but does not have funds available to properly close the landfill. To date, cost recovery actions have not been pursued.

### FUTURE RESPONSE NEEDS

### PROJECTED COST

#### REMEDIAL ACTION

**\$1,100,000**

The site is situated in a location containing mostly low permeable clay. Leachate outbreaks have contaminated the surface of the soil. An investigation is needed to identify any contamination of the surface soils above the residential criteria. The contamination is not expected to affect the groundwater; however, surface water may be affected.

Funds are also needed to complete the closure of the facility. This will include construction of an access road; a landfill cap; cap repairs (in Area C); leachate removal and disposal; and installation of rock letdowns, ditches and sedimentation control structures. Any contaminated soils could be incorporated into the landfill during the closure activities.

The closure of the facility will require two feet of clay in Area A, Cells 56 and 57, and about six inches in Area C. Refuse will be excavated and placed in Cell F. The entire landfill will be graded, sloped, seeded, mulched and vegetated. Surface water structures such as rock letdowns, ditches, and sedimentation control ponds will be constructed as necessary.

#### OPERATION AND MAINTENANCE

**\$182,000**

The pumping and hauling of leachate will be necessary twice a month at 6,000 gallons per pumping event for two years. The access road will need to be constructed prior to starting the pump and haul activity.

### SPECIAL CONSIDERATIONS

In FY98, the MDEQ allocated \$16,000 for operation and maintenance costs. The FY98 funds will be used for the pumping and hauling of leachate. Authorization for expenditure will be requested when the pumping activity starts.

**FUNDING HISTORY**

General Fund Authorizations			Bond Fund Appropriations						
YEAR	ACTION	AMOUNT	YEAR	ACTION	AMOUNT	ACTION	AMOUNT	ACTION	AMOUNT
			1998	OM	\$16,000				

**FY00 PROPOSED ACTION**

Seven hundred and thirteen thousand dollars (\$713,000) are requested to complete the closure of the facility and maintain leachate levels in the landfill. The closure of the facility must begin immediately to avoid leachate running off the landfill. Funds will be used to close Cell F, which is posing a threat by being open and accessible to the public; grade; slope and vegetate; and install a fence and a gate to control access to the landfill. An additional \$387,000 are requested to be transferred to this site from savings from another bond site to complete the above actions.

\*Note\* As of October 1995, the cleanup program responsibilities were transferred from the MDNR to the MDEQ. As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) for water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ.

## SITE SUMMARY

### **Site Name**

Ann Arbor Railroad Yard  
600 South Oakwood Street  
Owosso, Michigan

**County:** Shiawassee

**MDEQ District:** Shiawassee

**Site ID #:** 780002

**MAIN Project #:** 450466

**Site Score:** 34

### **LOCATION**

The Ann Arbor Railroad Yard site is a long narrow site encompassing approximately 17 acres on the banks of the Shiawassee River in the center of the City of Owosso. The site has approximately one-half mile of river frontage and ranges from 250 to 550 feet wide. The site consists of multiple train tracks, a railroad yard, an office building, an engine repair building, a metal and wood shop, a refueling operation, a fuel oil tank farm, a feed mill, and a building utilized by a local railroad club. Land-use surrounding the site includes the commercial/retail district of Owosso to the north and west of the site and residential areas north and immediately south of the site. Industrial facilities are located to the east and west of the site.

### **SITE HISTORY**

The site has been an active railroad yard for over 100 years. The site was originally owned and operated by the Ann Arbor Railroad Company for most of the century. In the mid-1970's, the facility was acquired by Grand Trunk Western Railroad (GTWRR). In 1976, GTWRR leased the property to the Michigan Department of Transportation (MDOT) and MDOT subleased the property to the Tuscola and Saginaw Bay Railroad (TSB). TSB has operated the site since the mid 1980s. TSB uses the site as a switch yard and repair facility.

Environmental problems associated with the site are documented back to 1973, when releases of fuel oil were observed discharging to the Shiawassee River. In 1989, MDOT conducted a limited evaluation of the soil and groundwater at the site. The evaluation included the installation of soil borings and monitoring wells, soil and groundwater sampling and analysis, and a visual site inspection. The investigation focused on a diesel engine refueling area, a fuel storage area, an engine repair shop, a fill area, a feed mill operation, and an electrical substation. The results of the investigation revealed an area of heavily saturated soils (approximately 500 feet by 100 feet area) at the engine refueling area, three feet of free phase liquid petroleum hydrocarbons on the groundwater at the fuel storage area, and solvent contamination in the groundwater near the engine repair shop. Groundwater contamination has been documented to be impacted with trichloroethylene up to 690 parts per billion (ppb), more than 100 times the health-based drinking water value of five ppb. In addition, trans-1,2-dichloroethylene, 1,1,1-trichloroethane, and 1,1,2-dichloroethane were detected above the health-based drinking water values. The area is serviced by municipal water.

### **SITE STATUS**

According to the city of Owosso, in January 1998 the site was purchased by TSB and continues to be operated as a railroad yard. The city of Owosso has plans to redevelop the portion of the property along the Shiawassee River as part of a river walk trail. The remaining part of the site is proposed to expand the existing railroad yard and to develop a portion of the site as commercial property.

### **ENFORCEMENT STATUS**

The Michigan Department of Environmental Quality (MDEQ) released MDOT from liability associated with the site based on Part 201 of the Natural Resources and Environmental Protection Act, P.A. 451 of 1994, as amended.

**FUTURE RESPONSE NEEDS****PROJECTED COST****INTERIM RESPONSE****\$400,000**

Interim response measures are needed to define the extent of liquid free-phase petroleum hydrocarbons and initiate removal of the free product. In addition, it may be necessary to remove the aboveground fuel storage tanks or other potential source areas and heavily impacted soil. Demolition of existing structures may also be necessary for redevelopment of the property.

Funds are needed for remedial investigation activities to determine the extent of the soil and groundwater contamination associated with the engine refueling area and fuel storage area and to determine the source and extent of the solvent contamination. Also, an evaluation must be conducted to determine the possible impacts the contamination may have on the Shiawassee River.

**FUNDING HISTORY**

No state funds have been appropriated or expended at this site.

**FY00 PROPOSED ACTION**

Three hundred thousand dollars (\$300,000) are requested for interim response measures. These activities will define the extent of free phase liquid petroleum hydrocarbons, implement a free-product recovery system, determine the extent of the soil and groundwater contamination associated with the engine refueling area and fuel storage area and determine the source and extent of the solvent contamination. Additional activities may also include the removal of tanks and soil and an evaluation of the impact the contamination has on the Shiawassee River. An additional \$100,000 are requested to be transferred from savings from another site to conduct the actions outlined.

\*Note\* As of October 1995, the cleanup program responsibilities were transferred from the Michigan Department of Natural Resources (MDNR) to the MDEQ. As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) for water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ.

## SITE SUMMARY

### Site Name

Armens Cleaners  
630 S. Ashley  
Ann Arbor, Michigan 48104

County: Washtenaw

MDEQ District: Jackson

Site ID #: 810005

MAIN Project #: 450488

Site Score: 33

### LOCATION

Armens Cleaners is a commercial dry cleaning establishment located in an area of mixed residential, commercial and industrial usage. The Armens Cleaners property has been the location for dry cleaning operations since approximately 1950.

### SITE HISTORY

In 1985 improper waste handling procedures at the site were brought to the attention of the Michigan Department of Natural Resources (MDNR). Inspections of the facility revealed that solvent sludges, in particular perchloroethylene, were routinely placed in twenty gallon barrels and stored in the alley behind the facility. Filters from the dry-cleaning equipment were also stored in the alley. The barrels and filters were picked up by the municipal trash collection service. Vehicles would occasionally strike the barrels, knocking them onto their sides. The spilled solvents migrated onto an adjacent residential property. In November 1985, the owner and operator of the facility undertook an excavation to remove contaminated soils in the alley and in the residential yard. However, as the excavation progressed, it became clear that the structural integrity of the building and a utility pole was threatened. Despite the fact that contaminated soils remained, the excavation was halted. Soil samples collected from the excavation prior to backfilling indicated perchloroethylene concentrations ranging from 2700 to 7400 ppb. Four monitoring wells were installed at the site by the owner/operator of the facility. Samples collected from these wells indicated concentrations of perchloroethylene as high as 2200 ppb. The owner/operator's insurance company refused to pay for remedial environmental response actions due to the negligence of Armens Cleaners. Beginning in 1986, MDNR had requested additional work at the facility, including addressing the remaining soil contamination and undertaking a hydrogeological investigation to determine the full extent of the groundwater contamination.

### SITE STATUS

The owner/operator of Armens at the time of the release has not performed any additional activity to date. The owner/operator of Armens Cleaners sold the property and the business to another party. Since then, the second party has sold the business and assets to a third party but remains the owner of the property. The new business owners are renting the building and operate at the same location.

### ENFORCEMENT STATUS

Prior to the Part 201 amendments, requests were made of the operator at the time of release to perform additional response activities at the site. No additional activities were performed in response to the Michigan Department of Environmental Quality (MDEQ) requests. MDEQ staff is currently preparing a liability fact sheet.

### RESPONSE ACCOMPLISHMENTS

### EXPENDITURES

November 1998

**INTERIM RESPONSE****unknown – private funds**

A partial removal of contaminated soil was undertaken in late 1985 by the owner/operator at the time of the release.

**REMEDIAL INVESTIGATION****unknown – private funds**

A very limited remedial investigation was started in 1986 by the owner/operator.

**FUTURE RESPONSE NEEDS****PROJECTED COST****REMEDIAL INVESTIGATION****\$200,000**

The nature and extent of the groundwater contamination in the vicinity of the site is unknown. Groundwater in the vicinity is not used for any known purpose but criteria exist for various exposure routes that may be applicable at the location. The existing monitoring wells must be inspected, repaired or replaced in order to establish current groundwater conditions. A limited investigation of the remaining soil contamination needs to be performed in order to determine if the soil is a source of groundwater contamination and to determine if the remaining soil contamination poses a threat to the residents. If the soil is a source of ongoing contamination or if it poses an unacceptable risk to residents, the new data will assist in the selection of a remedy designed to address the problem.

**SPECIAL CONSIDERATIONS**

If, during the course of the above assessments, it is determined that contaminated groundwater is a concern, a separate remedy will need to be developed. Further, a great deal of public interest is generated about this site because it has been difficult to sell nearby properties.

**FUNDING HISTORY**

No state funds have been appropriated or expended on this site.

**FY00 PROPOSED ACTION**

Two hundred thousand dollars (\$200,000) are requested to perform a remedial investigation to assess risk posed by residual perchloroethylene in soils and groundwater in the residential area.

\*Note\* As of October 1995, the cleanup program responsibilities were transferred from the MDNR to the MDEQ. As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) for water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ.

## SITE SUMMARY

### Site Name

Staebler Road GW Contamination  
Enterprise, Jackson and Staebler Roads  
Ann Arbor, Michigan

County: Washtenaw

MDEQ District: Jackson

Site ID #: 810036

MAIN Project #: 453535

Site Score: 30

### LOCATION

The Staebler Road GW Contamination site is located approximately five miles west of the City of Ann Arbor in Washtenaw County. The site is situated in a small business park on the outskirts of a commercially developed area along Jackson Road. The surrounding land uses are commercial, light industrial, and residential.

### SITE HISTORY

This site came to the attention of the Michigan Department of Natural Resources (MDNR) in 1986 as a result of a Michigan Department of Public Health (MDPH) sampling of residential and business water supply wells in the area. The sampling indicated wide-spread groundwater contamination by organic solvents and volatile organic compounds (VOCs). To reduce the health risk posed by the contaminated groundwater, the State of Michigan provided funding for bottled water and later the installation of a municipal water line to provide the residences and businesses with safe drinking water. As a part of this program, all existing water supply wells were plugged to prevent future use. Installation of the water line was completed during the summer of 1989. Following the water supply replacement, the MDNR conducted an investigation to determine the source of the contamination. This was completed in July 1991.

The investigation revealed a plume of 1,1,1-trichloroethane in groundwater downgradient of a former 1,000-gallon underground concrete tank that had been used for waste disposal by a former owner/operator of the facility. The investigation also revealed that a much larger plume of 1,4-dioxane had spread a considerable distance and was moving toward an unnamed tributary to Honey Creek which subsequently flows into the Huron River. Subsurface soils are contaminated and are likely contributing to ongoing groundwater contamination.

### SITE STATUS

The results of the investigation enabled the MDNR to determine the source of the contamination. A Consent Judgment was signed and the successor corporation of the former owner/operator has committed to performing an additional investigation necessary to determine the extent of the contamination and to identify other sources, if any, at the facility.

### ENFORCEMENT STATUS

A Consent Judgment was signed by the successor corporation of the facility.

### RESPONSE ACCOMPLISHMENTS

#### INTERIM RESPONSE

Another intervening landowner of the affected property paid for the removal of a 1,000-gallon concrete tank.

#### ALTERNATE WATER

Over 88 businesses and residences were connected to the Ann Arbor municipal water supply system.

### EXPENDITURES

**private funds - unknown**

**private funds - \$1,561,439**

**REMEDIAL INVESTIGATION****\$355,832**

Twelve new monitoring wells and fourteen soil borings were installed to provide additional information on the lateral and vertical extent of contamination, site geology, hydrogeology, and soil and groundwater contamination. In addition, the private party conducted a remedial investigation to determine the extent of site contamination in both soils and groundwater. The cost of the private party's work is unknown.

**FUTURE RESPONSE NEEDS****PROJECTED COST****REMEDIAL ACTION****\$750,000**

A brief investigation needs to be performed to support a remedial action. The investigation will focus on soil contamination and any direct contact threats that may be posed by the contaminants. The soil contaminant concentrations also need to be evaluated to determine if continued leaching of chemicals from the soil will exacerbate existing conditions or perpetuate an injurious discharge to the groundwater.

Groundwater contamination needs to be treated to prevent further migration. A remedial action will consist of soil removal and begin groundwater remediation to prevent further migration.

**FUNDING HISTORY**

General Fund Authorizations			Bond Fund Appropriations						
YEAR	ACTION	AMOUNT	YEAR	ACTION	AMOUNT	ACTION	AMOUNT	ACTION	AMOUNT
1987	AW	\$11,400	1989	RI	\$250,000 <sup>t1</sup>				
1988	AW	\$1,636,900	1992	RI	\$500,000 <sup>t2</sup>				
1989	AW	\$13,500							

**FY00 PROPOSED ACTION**

Six hundred and thirty one dollars (\$631,000) are requested for the remedial actions described above. In addition, \$119,000 are requested to be transferred from savings from another site to conduct these actions.

\*Note\* As of October 1995, the cleanup program responsibilities were transferred from the MDNR to the MDEQ. As of April 1996, the functions performed by the MDPH for water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ.

<sup>t1</sup> \$111,300 were transferred to this activity from another bond site.

<sup>t2</sup> \$500,000 were transferred from this activity to another bond site.



## SITE SUMMARY

### Site Name

Village of Dexter Municipal Wells  
Dexter, Michigan

County: Washtenaw

MDEQ District: Jackson/DWRPD

Site ID #: 810482

MAIN Project #: 454635

Site Score: 37

### LOCATION

The Village of Dexter Municipal Wells site is located in the northeast part of the village of Dexter, between the railroad tracks and the Huron River off of Central Street. The area includes residential, commercial, and industrial uses.

### SITE HISTORY

The Dexter wells have been contaminated by volatile organic compounds (VOCs), primarily tetrachloroethylene (PCE), trichloroethylene (TCE), 1,1,1-trichloroethane (TCA), and cis-1,2-dichloroethylene (DCE). PCE has been present at levels exceeding generic health based residential drinking water criteria. The contamination, detected in 1990, has been consistently present ever since. There are some potential sources nearby, mainly a former small pond that allegedly received waste water from a laundry operation that dealt with cleaning oily rags from the Willow Run Bomber Plant and a car wash operation.

### SITE STATUS

The village wells are going to be replaced with a new well field. The source of the contamination remains unknown.

### ENFORCEMENT STATUS

To date, no enforcement actions have been initiated.

### RESPONSE ACCOMPLISHMENTS

### EXPENDITURES

#### ALTERNATE /MUNICIPAL WATER

**\$450,000**

Funds have been authorized for the state's share of costs for the construction of a new well field for the village of Dexter including a watermain to the existing water distribution system.

### FUTURE RESPONSE NEEDS

### PROJECTED COST

#### REMEDIAL INVESTIGATION

**\$500,000**

In order to determine the source and existing threat of the contamination, monitoring wells need to be installed, existing wells surveyed and sampled and water level measurements of groundwater and surface water collected.

### FUNDING HISTORY

General Fund Authorizations			Bond Fund Appropriations						
YEAR	ACTION	AMOUNT	YEAR	ACTION	AMOUNT	ACTION	AMOUNT	ACTION	AMOUNT
			1997	AW	\$450,000				

**FY00 PROPOSED ACTION**

Three hundred and eighty one dollars (\$381,000) are requested to perform a remedial investigation to determine the source of the groundwater contamination and to assess any threat of existing contamination. An additional \$119,000 is requested to be transferred from savings from another site to conduct these activities.

\*Note\* As of October 1995, the cleanup program responsibilities were transferred from the Michigan Department of Natural Resources (MDNR) to the Michigan Department of Environmental Quality (MDEQ). As of April 1996, the functions performed by the Michigan Department of Public Health (MDPH) for water supplies were transferred to the Drinking Water and Radiological Protection Division (DWRPD) of the MDEQ.

## SITE SUMMARY

### Site Name

320 N. Main  
Chelsea, Michigan

County: Washtenaw

MDEQ District: Jackson

Site ID #: 810490

MAIN Project #: 455178

Site Score: 34

### LOCATION

The site is located at 320 N. Main and 310 N. East Street, in the downtown Chelsea area. The site consists of two buildings and several different tax parcels. The surrounding land use includes commercial, industrial and residential.

### SITE HISTORY

The property has served industrial uses for over 100 years. Past uses of the property have included painting, plating, foundry operations, enameling, polishing and annealing. Most recently, the property was used for the manufacturing of wire products for the automobile seating industry.

### SITE STATUS

Chelsea Industries currently occupies the property. A Baseline Environmental Assessment (BEA) included data that indicated trichloroethylene (TCE) and vinyl chloride are present at levels exceeding the soil volatilization to indoor air criteria and the infinite source volatile soil inhalation criteria. TCE, benzene, vinyl chloride, and cis 1,2-dichloroethylene impact groundwater at levels exceeding residential health based drinking water values.

### ENFORCEMENT STATUS

There has been no enforcement actions taken against any party to date. Establishing a potentially liable party will be difficult due to insufficient data as to when the contamination occurred and the source.

### FUTURE RESPONSE NEEDS

### PROJECTED COST

#### REMEDIAL INVESTIGATION

**\$350,000**

A remedial investigation to determine the extent of the soil and groundwater contamination needs to be completed at this site. The potential for residential targets being impacted from this site needs to be investigated. In addition, Chelsea's municipal well may be in danger from the spread of contamination.

### FUNDING HISTORY

No state funds have been appropriated or expended at this site.

### FY00 PROPOSED ACTION

Three hundred and fifty thousand dollars (\$350,000) are requested to initiate a remedial investigation to determine if receptor populations are at risk.

## SITE SUMMARY

### Site Name

Vulcan Mold & Iron Landfill  
1251 Fort Street  
Trenton, Michigan

County: Wayne

MDEQ District: Southeast Michigan

Site ID #: 820056

MAIN Project #: 455229

Site Score: 31

### LOCATION

The former Vulcan Mold & Iron Landfill site is located east of Fort Road and north of King Road. It is surrounded by the Sibley Quarry.

### SITE HISTORY

The Vulcan Mold & Iron Landfill site was created by an iron foundry that produced iron castings and disposed of the sands and solid wastes that were generated during the casting process in an on-site landfill. In 1992 the property was separated into two parcels, a 7 ½-acre parcel which contained the landfill and a 45-acre parcel which consists of the foundry and other buildings. Vulcan Iron & Mold, original owners of the site, went bankrupt in the late 1980s. Fox Chase, Ltd. owns the 7 ½-acre parcel but is not liable for the contamination.

Monitoring wells installed at the site in the 1980s showed that clay soils at the site had been mined to the depth of the aquifer, approximately 80 feet deep. Foundry wastes and wastes from other unidentified sources were placed at this depth and up to the surface level. Groundwater is contaminated with benzene above drinking water standards.

### SITE STATUS

The area is supplied with municipal water, however, three well logs within a one and one-half mile radius indicate usage of the aquifer for irrigation and for a horse farm. The direction of groundwater flow in the aquifer is unknown. The aquifer needs to be delineated and the direction of groundwater flow determined to ensure protection of public health. The aquifer may discharge to the Trenton Channel, which may involve a GSI exceedance. It is also not known if contaminants are impacting wells in this area.

### ENFORCEMENT STATUS

The liable parties for this site are bankrupt. Under Part 201, Environmental Remediation, of Act 451, no liable parties exist.

### FUTURE RESPONSE NEEDS

### PROJECTED COST

#### REMEDIAL INVESTIGATION

**\$260,000**

Soils and groundwater at the site need to be investigated to determine the extent of contamination and the exposures present at the site.

### FUNDING HISTORY

No state funds have been appropriated for or expended at this site.

### FY00 PROPOSED ACTION

Two hundred and sixty thousand dollars (\$260,000) are requested for the remedial investigation to be performed at the site.

## SITE SUMMARY

### **Site Name**

General Oil Northville  
(Mergraf Oil Site)  
175 Railroad Street  
Northville, Michigan 48167

**County:** Wayne

**MDEQ District:** Southeast Michigan

**Site ID #:** 820208

**MAIN Project #:** 451591

**Site Score:** 43

### **LOCATION**

The General Oil site, an active waste oil recycling operation, is located in a mixed residential and industrial area of Northville. Lake Success, an inundated former sand and gravel quarry, borders to the northeast; and Ford Pond, which drains into a tributary of the Rouge River, borders to the west. Two groundwater wells are located proximate to the site. One is a production well located at an adjacent business to the east. The other is a public well (to the southwest) operated by the local Rotary Club as an artificial artesian well. The site consists of three parcels: General Oil, Ely Fuel (an adjacent transport area) to the south, and Doheny (part of the former lagoon area) to the north.

### **SITE HISTORY**

A now defunct company conducted oil recycling operations at the site from approximately 1950 through 1970. Unlined earthen lagoons were utilized to store waste oils containing chlorinated solvents, polychlorinated biphenyls (PCBs) and heavy metals. Aerial photographs obtained by Michigan Department of Environmental Quality (MDEQ) personnel have identified five separate lagoons that were constructed at various times during this period. Four lagoons were located within the property boundaries and one was located east of the property.

A second waste oil recycling company in 1971 purchased the operation. At the time of sale, reportedly only one of the five lagoons was in operation. All others had been filled and were not evident from the surface. The remaining lagoon was reportedly closed sometime between 1972 and 1974. The present owners of the operation purchased the facility in the early 1980s. A building supply company currently owns the property where the eastern off-site lagoon was located.

Problems at the site were first identified in 1983, when waste oil was observed seeping into Ford Pond. Remedial investigations that were completed in 1990, 1991 and 1992 confirmed that the free phase waste oil is emanating from an old lagoon located approximately 400 feet east of the pond. Investigation activities completed within the General Oil facility boundaries have confirmed that all four on-site lagoons are sources of gross soil and groundwater contamination. Soils proximate to the old lagoons are saturated with waste oils. Groundwater throughout the site is contaminated with chlorinated solvents (known human carcinogens) at concentrations up to 1,100 times greater than levels protective of human health for drinking water. Free phase waste oils containing chlorinated solvents, PCBs, and heavy metals overlie the water table at three of the former lagoon locations. Free product is entering the nearby Ford Pond and presents an acute hazard. Recent data indicate that the PCBs are present beneath the north lagoons at levels greater than 100 ppm. The interceptor trench for the nearby surface water does not appear to be effective and free product is entering the surface water. The extent of the contamination from the lagoon located at the adjacent building supply company has been characterized. A large free product and dissolved phase plume has been defined. The free product in this area contains PCBs at levels greater than 50 ppm. The

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recent data also indicates that the Rotary Club's nearby drinking water well may be hydraulically connected to the contaminated aquifer.

### **SITE STATUS**

The property continues to be utilized for waste oil recycling operations by the current owner. A liability determination has not been completed, but the current property owner has not utilized the lagoons. The owner is actively operating a surface water free product recovery system and a recovery well upgradient of the surface water release. Ely Fuel, Inc. completed an investigation of their property and removed fuel-impacted soils. The MDEQ is in the process of completing an interim response action at the General Oil site.

Private remedial activities, other than the operations and maintenance activities described above have ceased. Contamination is anticipated to continue to spread into areas of the aquifer presently not impacted. Private wells may be impacted and free product and related contamination will continue to flow, uninhibited, into the Rouge River.

### **ENFORCEMENT STATUS**

It is not certain whether any past or present owners or operators of the site can be demonstrated as liable for the contamination. The current owner of the site has expressed commitment to continuing limited interim response activities. However, there is no guarantee that these activities will be continued if they become financially burdensome for the company.

### **RESPONSE ACCOMPLISHMENTS**

### **EXPENDITURES**

#### **REMEDIAL INVESTIGATION**

**\$150,000**

A remedial investigation was conducted which assessed the risk associated with the free product. Additional limited investigation activities will be completed to facilitate the feasibility assessment.

The soil and groundwater sampling program conducted by the owners/operators successfully identified the problem at the site. Data was lacking on the contamination associated with the lagoon located on the adjacent building supplies company (Doheny) property. Data was also lacking on the vertical extent of free product, site specific transport characteristics, the extent of the dispersed plume and the impact to the nearby surface water.

#### **INTERIM RESPONSE**

**\$680,000**

A past and a present owner/operator of the site have funded the maintenance of a floating boom system at Ford Pond since 1991 in an attempt to collect infiltrating free product. A skimmer trench, designed to capture waste oils before they reach Ford Pond, was constructed in February of 1994 and is regularly maintained. Oil recovery activities were expanded in 1995 by the addition of an active product recovery well installed upgradient of the oil seep at Ford Pond. This active system has subsequently been shut down because it was ineffective. Oil recovery activities continue by the current operator. Expenditures by private parties are not known.

An investigation is being conducted to determine the extent of the free product in off-site areas, to develop a comprehensive free product recovery strategy and to implement a recovery plan. Maintenance of oil recovery systems will also be conducted if the present owners end their involvement with the cleanup.

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**OPERATION AND MAINTENANCE****private funds -- unknown**

General Oil is presently operating and maintaining recovery booms within the Ford Pond and a free product recovery trench upgradient of the pond.

**FUTURE RESPONSE NEEDS****PROJECTED COST****REMEDIAL INVESTIGATION/FEASIBILITY ASSESSMENT****\$320,000**

The remedial action will include a feasibility assessment (FA) of limited scope and the selection of a cost-effective remedial alternative. The FA will involve some limited investigation, modeling and/or pilot testing. The remedial action will be designed to limit the risks identified by the remedial investigation. The anticipated system may include a barrier to free product migration, a free product capture or removal system, in-situ stabilization or thermal desorption of the more viscous free product and bank stabilization. Excavation will also be considered. Funds for this activity were appropriated in FY99.

**INTERIM RESPONSE****\$1,000,000**

The recent investigation results indicate that the environmental impact at the site is significant. The PCBs present an acute risk and are impacting the nearby surface water. The potential exists that groundwater, which is utilized by the community, may become impacted. The costs to remediate this problem are difficult to project, but considering that the free product is rather extensive, contains PCBs, extends beneath a railroad right-of-way and is entering the nearby surface waters, the cost to remediate this problem will be significant. The estimated cost will likely be greater than \$1,000,000 and could reach \$10,000,000 if excavation is the selected option and remediation of the pond sediments is necessary.

**FUNDING HISTORY**

General Fund Authorizations			Bond Fund Appropriations						
YEAR	ACTION	AMOUNT	YEAR	ACTION	AMOUNT	ACTION	AMOUNT	ACTION	AMOUNT
1997	IR	\$100,000	1995	IR	\$750,000 <sup>††</sup>				
1998	RI	\$150,000	1998	RI	\$150,000				
			1998	IR	\$320,000				

**FY00 PROPOSED ACTION**

One million dollars (\$1,000,000) are requested to implement the selected response actions to mitigate the contamination.

<sup>††</sup> \$70,000 was transferred from this site to another bond site.

## SITE SUMMARY

### Site Name

Feister Oil Company  
5635 Newburgh Road  
Westland, Michigan

County: Wayne

MDEQ District: Southeast Michigan

Site ID #: 821427

MAIN Project #: 451395

Site Score: 31

### LOCATION

This property is located in a densely populated, primarily residential area of Westland. The site is northwest of the intersection of Ford and Newburgh roads. The intersection has several gasoline stations, one is adjacent to the Feister Oil property. The site is located on an ancient beach ridge formation that tends to allow for rapid migration of contaminants.

### SITE HISTORY

When development of the property directly southeast of Feister Oil began in the early 1980s, free product was encountered from an off-site source. This property became a Sunoco station and wells were installed which have encountered free product since their installation. One well in a road easement adjacent to Feister Oil has greater than one foot of product. The product has been fingerprinted and appears to be diesel fuel/#2 fuel oil and leaded gasoline, which have been products stored at Feister Oil since the 1960s. Petroleum products were stored in above-ground and underground tanks at Feister Oil. The underground tanks were removed in the 1980s and the aboveground tanks were removed in the 1990s. The site is presently being used as a storage/sales lot for recreation vehicles.

### SITE STATUS

In October 1996, at the request of the Michigan Department of Environmental Quality (MDEQ), Feister Oil installed two borings/monitoring wells adjacent to the aboveground tanks in order to investigate the presence of free product. Product was not encountered in these wells. Contamination from the underground tanks has not been investigated.

### ENFORCEMENT STATUS

The MDEQ requested site access to conduct sampling to investigate the free product. Access was denied by Feister Oil. Feister Oil has stated the absence of product in their wells shows they are not the source of the product and will not conduct any further investigations. The MDEQ does not agree with this statement and believes if an additional investigation was conducted, it would be determined that the source of product in the area is Feister Oil.

### RESPONSE ACCOMPLISHMENTS

#### INTERIM RESPONSE

The potentially liable party has installed several monitoring wells at the site.

### EXPENDITURES

**private funds - unknown**

### FUTURE RESPONSE NEEDS

#### REMEDIAL INVESTIGATION

An investigation is needed to determine groundwater flow and the source of free product in the area. The full extent of contamination needs to be delineated.

### PROJECTED COST

**\$300,000**

### FUNDING HISTORY

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No state funds have been appropriated or expended at this site.

**FY00 PROPOSED ACTION**

Three Hundred Thousand dollars (\$300,000) are requested to conduct the remedial investigation at this site.

## SITE SUMMARY

### Site Name

CYB Tool (former)  
42056 Michigan Avenue  
Canton, Michigan

County: Wayne

MDEQ District: Southeast Michigan

Site ID : 821634

MAIN Project #:

Site Score: 33

### LOCATION

The CYB Tool site is located in a mixed commercial/industrial area of Canton. The site is bordered by the Rouge River and is adjacent to the Michigan Avenue Dump.

### SITE HISTORY

The site has been used for manufacturing activities since the 1940s. Waste lagoons on-site were utilized in the 1940s as part of a plating operation. The lagoons were located across the river at the site of operation. During the early 1960s, the river was re-routed and the area was backfilled. The site changed hands multiple times between 1940 and the 1990s and was most recently owned by CYB Tool. Presently the property is owned by a Limited Liability Corporation and is for sale.

Site investigations were conducted in 1993 by the United States Environmental Protection Agency (USEPA). Also, in 1997 a consultant conducted an investigation as part of a Baseline Environmental Assessment (BEA).

### SITE STATUS

Landfill material and the former plating lagoons are the property's contamination sources. The lagoons are now at least 17 feet below grade and about 30 to 40 feet from the river. The lagoon sludge contains elevated levels of metal and cyanide with chromium at 210,000 parts per million (ppm), lead at 2,800 ppm, and cyanide at 2,800 ppm. This contamination has migrated into the surrounding soils. Recent samples of the lagoon sludge indicate that it contains polychlorinated biphenyls (PCBs) and Aroclor 1260 at 830 ppb. The fill material is primarily construction debris and fill soils, but also contains a limited number of containers of waste material and automotive parts. The bank is undeveloped and steep and presents a surface highly susceptible to erosion.

Remedial activities have ceased. Contamination is likely continuing to impact the nearby Rouge River. Some form of bank stabilization is anticipated.

### ENFORCEMENT STATUS

Considering the age of the lagoons, it is unlikely that a viable liable party exists. A liability review will be completed.

### RESPONSE ACCOMPLISHMENTS

#### REMEDIAL INVESTIGATION

The USEPA conducted a site investigation in 1993. At that time, five trenches were excavated, including trenches within the lagoons and samples were submitted to be analyzed for an extensive list of metals and priority pollutants.

### EXPENDITURES

**\$50,000**

### FUTURE RESPONSE NEEDS

### PROJECTED COST

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**INTERIM RESPONSE****\$100,000**

A remedial investigation is needed to assess whether the river sediments are being impacted. A feasibility assessment of limited scope and the selection of a cost-effective remedial alternative will also be conducted.

**REMEDIAL ACTION****\$362,500**

Remedial action will be necessary if the river is impacted, or will be impacted.

**FUNDING HISTORY**

No funding has been appropriated for or expended at this site.

**FY00 PROPOSED ACTION**

One hundred thousand dollars (\$100,000) are requested to complete the remedial investigation, feasibility assessment and selection of a remedy.

## SITE SUMMARY

### Site Name:

Michigan Tire Recycling  
6550 Gratiot Avenue  
Detroit, Michigan

County: Wayne

MDEQ District: Southeast Michigan

Site ID #: 821640

MAIN Project #: 455192

Site Score: 22

### LOCATION

The Michigan Tire Recycling site is a 4.6-acre site located on Gratiot Avenue, east of downtown Detroit. Gratiot bounds it on the north, Bellevue Street to the east, a railroad spur to the south, and a Rotary Multi Forms business and a gas station to the west. The area surrounding the property is comprised of mixed uses ranging from residential to light industrial. The site is near numerous residences.

### SITE HISTORY

New Calvary Baptist Church currently owns the property. Previously, it was a registered scrap tire collection site. The former tenant filled the majority of a large cinder block building with scrap tires. Registrations indicate 50,000 square feet of the building was to be used for scrap tire storage. Additional scrap tires are stored in semi trailers located on the site and in lots across Bellevue Street. The New Calvary Baptist Church has initiated Civil Litigation against the former tenant to assist in the scrap tire removal. The use of the site prior to the scrap tire recycling is unknown.

### SITE STATUS

Estimates of the number of tires on site have ranged from one to three million tires, however, the building dimensions are needed for a more accurate estimate. Scrap tire collection site registrations submitted through January 27, 1997, indicate 1,675,000 tires had been delivered to the site. The majority of the tires are stored inside the building. The site owner has hired a security guard to monitor the site. There has been one case of someone breaking into the facility and the concern of arson exists.

The site owners have made arrangements for the two-inch tire shreds to be hauled to a tire derived fuel (TDF) burner at no charge. The TDF burner will not take the whole tires or larger shreds.

In its current state, the site is a threat to human health and safety. A fire at the site will have a major impact on human health, the environment, and the economic well being of the city of Detroit. This site is prime for redevelopment if the scrap tire issues can be addressed.

### ENFORCEMENT STATUS

The Detroit Building, Safety and Engineering Department had limited the number of tires stored on the site to less than 5,000 in permit 118-93. The city of Detroit issued tickets in August of 1995 for violations of the permit and initiated the process to revoke the permit. In addition, the Detroit Fire Department wrote violations in 1997 for improper storage of scrap tires.

The site has also been in violation of the state's Scrap Tire Regulations for indoor and outdoor scrap tire storage. The State of Michigan has initiated Criminal Litigation against the processor.

### FUTURE RESPONSE NEEDS

### PROJECTED COST

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**INTERIM RESPONSE**

**\$500,000**

The scrap tires are creating a potential health hazard and need to be removed to protect human health and foster redevelopment of the property.

The church has been working to find an outlet for the scrap tires and may have found a facility willing to take the shredded tires at no charge. Funds are needed for the transportation of the scrap tires to the TDF burner and to remove and dispose of remaining tires.

**FUNDING HISTORY**

No state funds have been appropriated for or expended at this site.

**FY00 PROPOSED ACTION**

Four hundred and thirty one thousand dollars (\$431,000) are requested to remove and properly dispose the tires. In addition, \$69,000 are requested to be transferred from savings from another site for these activities.